THE ELEMENTARY SCHOOL JOURNAL

VOLUME XXV NOVEMBER 1924 NUMBER 3

Educational News and Editorial Comment

OPPOSITION TO THE CHILD-LABOR CONSTITUTIONAL AMENDMENT

Henry S. Pritchett, president of the Carnegie Foundation for the Advancement of Teaching is opposed to the amendment of the United States Constitution in order to give Congress power to control child labor. In a speech printed and distributed by the National Industrial Council, which has its headquarters in the Union Trust Building, Washington, D.C., Mr. Pritchett says:

The amendment confers upon the Congress a power far beyond the mere regulation of child labor. It puts into the hands of the Congress the power to regulate, limit, or prohibit the labor of persons up to the age of eighteen. This is a blank check which future Congresses may fill out as they please. Under it the complete control of the labor of all persons under eighteen, in every state and community, may be taken out of the hands of the state, of the community, and of the parents and vested in a government bureau at Washington. *No such sweeping invasion of personal and local civil rights has ever before been proposed in this country.* . . . .

Under the influence of public opinion, the regulation of child labor by the states has steadily advanced. In only a few states are the laws below the standard indicated as wise and just by the experience of the world. These states are mainly in the South, where factories are relatively new. It was most natural that in the South a considerable portion of the population should be

attracted by the new opportunities for earning money offered in the cotton mills and other manufacturing industries set up in the last quarter century. Exactly the same thing happened in New England when cotton and woolen mills were first established there. But public opinion has moved rapidly. Most states have passed sound legislation excluding children from unwise and injurious labor.

The matter is rapidly being solved by the wholesome process of the education of public opinion in the various communities. *There is no crying need for the central government to take the question out of the hands of the states and settle it by regulation from Washington.*

The arguments put forward for taking this question out of the hands of the states are weak. It is urged, for example, that certain New England cotton mills are at a disadvantage in competition with the cotton mills in those southern states that have not as yet brought this child-labor legislation to the same standard as that in Massachusetts. When all has been made of this argument that can be made, little cause is found for this sweeping legislation. The present discrepancies between state laws are being removed. The enforcement of the law depends on the public opinion of the region in which the mills are operated. There still remains, as the census shows, a considerable employment of children in indoor industries even where the laws are explicit in its regulation. In this matter *it is wiser to follow the old and sure process of education of public opinion in the separate states and communities than for the federal government to undertake to coerce them. . . . .*

Finally, *if history is to be trusted, this bill points straight to socialism—a socialism of dependence under which more and more people live on or by government.*

Under the powers of this amendment, successive Congresses will vie with each other in extending its application by specific status. Interference with the gainful employment of persons under eighteen will become more and more pronounced. In due time parents will make a claim for the enforced loss of the services of their elder children. By the same process by which this agitation has been obtained, they will get it.

There can be no doubt that the amendment gives Congress great powers. It is hardly an aid to clear thinking to attempt to defeat the measure by calling it names. If it is socialism for this country to give its children proper care, we ought to hasten to legalize socialism. England enacted a very wholesome law which did very much to put all employment of children under eighteen under the control of the government. It is quite definitely accepted that parents and even small communities cannot be trusted to give unselfish regard to the interests of children. Mr. Pritchett to the contrary notwithstanding, it is not safe to intrust the nation's children to the state legislatures, which are often controlled by those who are

willing to exploit all kinds of human beings. There must be some strong agency which is far enough removed from sordid interests to insure proper control of children. The only danger is that even Congress is not far enough from improper influences to deal in a wholly impartial way with the matter.

It is well that Mr. Pritchett should state the issue. He and those of like mind are influential with state legislatures, which must act favorably if the amendment is to be adopted. Let the educators of the country consider carefully what the opposition has to say and then take up the work of bringing the nation to a clear understanding of the necessity of providing better conditions for children.

SUPPLEMENTARY MATERIALS SUITABLE FOR ELEMENTARY-SCHOOL CLASSES

The American Sugar Refining Company, 117 Wall Street, New York City, has issued an illustrated booklet entitled, *The Story of Sugar*. This describes briefly the methods of raising and refining sugar. It begins with a short history of the use of sugar. It is frankly an advertisement but will make excellent reading for sixth-grade geography classes or for teachers who desire to pass on in modified form to pupils in the lower grades the information which it contains.

In a letter which accompanies the booklet is the following statement:

> We now have motion pictures in two reels dealing with raw sugar production and cane sugar refining. These pictures present important cogs in the wheels of the cane sugar industry.
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> Reading about the processes of sugar refining interests us but mildly. Seeing these processes as presented in motion pictures leaves a vivid and lasting impression of the extensive scope of the industry and of the high state of mechanical development which is the result of years of effort applied by geniuses whose inventions have made possible the production of the sparkling white sugar demanded by every family throughout the world.
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> These pictures illustrate the clearing and developing of virgin soil, the planting and harvesting of the cane, the many operations involved, the costly modern machinery it demands for the manufacture of this product without the touch of a human hand before it reaches its consumer. Motion pictures that give such interesting information on sugar refining make a most desirable addition to any educational institution.

This company grants the privilege to all who are interested to book these reels for any entertainment program having an audience of about one hundred or more; also to recommend them to an educational or welfare center in their community. They are being exhibited constantly by universities, schools, churches, women's clubs, men's clubs, societies, Y.M.C.A., parks, industries, city departments, Y.W.C.A., libraries, museums, hospitals, theaters, business, public institutions, recreation centers, etc.

On account of the great demand and the limited number of reels, it is advisable to book them a week or ten days in advance. These films are of theater standard width.

This company furnishes this service gratis.

The Department of Health of the State of New Jersey (Trenton, New Jersey) has published a pamphlet containing pictures and the life-histories of all of the common household insects. It discusses the relation of these insects to health and suggests measures of sanitation which should be adopted in the home.

The Department of the Interior of the United States issues the following notice:

A series of educational motion picture films, which depict in a most striking manner the processes employed in the mining, preparation, and utilization of the various mineral materials, is available for distribution in Chicago by the Bureau of Visual Instruction of the Chicago Board of Education. These films, which were produced by the Department of the Interior, through the Bureau of Mines, in co-operation with the larger industrial concerns, tell the story of the workings of the nation's tremendous mineral industries in a much more vivid and colorful manner than is possible through the medium of any printed page. Another series of films preaches the doctrine of "safety first," by showing safe and unsafe methods in mining and metallurgical practice.

Nearly a hundred educational films have been prepared in the past few years by the Bureau of Mines in co-operation with industrial concerns. The demand for these films for showing by educational institutions, churches, civic bodies, and other organizations has become so great that the original plan of centralized distribution from the Pittsburgh Experiment Station of the Bureau of Mines has become inadequate. A selected list of the best of these films is now made available at distributing centers located in the different states. The films relate to coal, petroleum, sulphur, iron, asbestos, zinc, marble, copper, natural gas, and other minerals. A series of films depicts most interestingly such industrial processes as the manufacture of oxygen, the making of fire-clay refractories, the manufacture of automobiles, the methods of compressing air, the quarrying of limestone, etc. Other films illustrate dangerous and safe practices in mining, efficiency in the combustion of coal, the utilization of water power, and the operation of a gasoline motor.

Full information as to the procedure necessary to obtain educational motion pictures from the Bureau of Mines and other sources may be obtained by addressing the Bureau of Visual Instruction, Chicago Board of Education, 460 South State Street, Chicago, Illinois.

The National Committee for Better Films, 70 Fifth Avenue, New York City, describes its publication of a fall list of selected films as follows:

To disseminate information about the better films and encourage their exhibition and patronage and at the same time to promote the reading of good books, the National Committee for Better Films offers a list of 282 carefully selected motion pictures based on standard or current works of fiction or other literature. This list represents an impartial selection from the product of all companies and covers the pictures seen and chosen by the skilled volunteer committees of the National Board of Review as "better films" during the past three years.

EDUCATION IN THE PHILIPPINE ISLANDS

There is one direction in which the American occupation of the Philippines has been an unqualified success, that is, in the organization of the school system of the islands. The reports of the Bureau of Education of the Insular Government are documents which American educators can examine with profit. The twenty-fourth annual report, which has just been issued, shows the devices and equipment by which the school system has been adapted to the particular needs of the people. There is an abundance of work in reading and language along with much concrete instruction in agriculture and home-making. The school buildings are adapted to the climatic conditions and are intended to give to the communities in which they are located new ideals of construction for utility and beauty.

The statistics and discussions in the present report make it clear that the school system of the Philippine Islands has reached a maturity which makes it possible to intrust to the native teachers, in a degree never before possible, the formulation of the details of the courses of study. The minute prescription of daily exercises which was originally necessary has been replaced, as the report states, by a greater freedom to adjust the work to local needs. The general outline of work to be taken up and suitable texts are still provided by the central authorities, but local autonomy is encouraged.

The report contains a number of illustrations which give the reader an idea of the school buildings, of the pupils, and of the work which they are doing.

The assistant governor of the Philippine Islands, who is also the secretary of public instruction, recently visited the United States. The Insular Congress has voted to have a survey of the schools, and the assistant governor came to the United States for the purpose of arranging for it. One of the major reasons for this survey is that the revenues of the Philippine Islands are proving inadequate for the expansion which is desired for the educational system. This furnishes another striking example of the fact which is being brought home to the American people, namely, that the maintenance of a varied and practical educational system, intended to serve equally all classes of the population, is an enormous financial burden for any civilization. Popular education of the right sort is one of the problems of a democracy. The meager education given in monarchies to the common people will not suffice for a politically independent people.

EMPHASIS ON WAR IN ELEMENTARY-SCHOOL HISTORIES

The Association for Peace Education, which has its headquarters at 5733 Blackstone Avenue, Chicago, has published a pamphlet entitled, *An Analysis of the Emphasis upon War in Our Elementary School Histories*. The method of the analysis reported in this study is the approved method of textbook analysis which has been developed in recent educational studies. Forty-eight books, including twenty-four textbooks on United States history and twenty-four supplementary readers, were analyzed, and the amount of space in each devoted to the discussion of war topics was determined and recorded. The details for each of the books are presented in graphs.

The conclusions reached as a result of the analysis are summarized as follows:

1. The average history text devotes a disproportionate amount of space to war. The war space could be reduced at least one-half without detracting from the historical value of the books.

2. The amount of space devoted to peace by both the texts and the supplementary readers is almost negligible. Historians have lamentably failed to grasp the significance of this topic for the twentieth century.

3. There are practically no illustrations of distinctly peace topics.

4. The war word content is, on the whole, nationalistic, biased, and, in many cases, flamboyant. Its tawdry emotionalism frequently violates every principle of good literature. So biased is much of the material that it is distasteful to the adult reader. Frequently the sectarian and the sectional views and the prejudices of the authors are quite evident.

5. The war illustrations, as a rule, picture only the glorified imaginings of the artists. Much of this material is so grossly untrue as to detract from the historical value of the books.

6. Very few histories even approach the real truth about war. Concealment and propaganda frequently appear.

7. Histories pay little attention to the Edisons, the Horace Manns, and the Franklins; they are too busy depicting the overdrawn exploits of the Lees, the Grants, and the Nathan Hales.

8. Much of the supplementary reading material of a historical nature is neither history nor literature; it is untrue sentimentalism.

AN ART PROGRAM

The school system of Joliet, Illinois, under the superintendency of H. A. Perrin, has attempted to define in detail the purposes and materials of a program of art instruction to extend from the kindergarten through the sixth grade. The program is printed in the form of a large chart and defines the general objectives, subject-matter, activities, materials, technique, and standards of achievement for each grade and similarly gives the grade items for each of the subdivisions of the course, such as those dealing with color, decoration, landscape, picture study, etc.

Perhaps the most interesting parts of the program for the general reader are the statements of objectives and the standards of achievement.

The objective common to the kindergarten and first grade is: "Use as a medium of expression and to enrich school experiences." The first grade has the special objective: "Use as a means of illustrating and vitalizing other subjects." The objective for the second grade is: "Expression of original thought and acquired experiences and those obtained through reading, story-telling, observation, etc." The common objective for the third and fourth grades is: "Use as a means of expressing thought with some appreciable measure of definiteness and accuracy. Through observation, study of form and color reveal beauty of nature."

The common objective for the fourth and fifth grades is: "Begin to establish the thought of art as being a need in life—as a source of pleasure largely." A special objective for the fifth grade is as follows: "Connect product of artist's mind and hand with lives of children."

The objective of the sixth grade is stated in the following terms: "Emphasize need of art and use of art in the world. Point out various uses—pleasure, application in commercial world."

The standards of achievement are as follows:

Kindergarten.—Simplicity of technic, control of media and necessary tools. Laying on color to represent crude shape in fruit, vegetables, and large simple flower forms. Simplest landscape.

First grade.—Slight knowledge of standards in technic. Rather definite control of media and necessary tools. Mixing of pigments to obtain color variation. Simplest proportions in technic; suggestion of growth in plant life representation. Simplest conventions used in landscape building.

Second grade.—Individual and characteristic shapes in leaves and flowers in any used medium. Have children abandoned characteristics of crudest representation? Are they meeting demands of simplest truth in representation of substance?

Third grade.—Importance given to essentials in pictures. Keeping to desired plan.

Third and fourth grades.—Judge thinking back of drawing. Do children live up to what they know and what they are able to do? Are children showing results of previous teaching? Simple conventions used in representation and composition. Proportions.

Fourth and fifth grades.—Ability to find origin of art and standards of art in nature. Selection of essentials in representation. Conventions in technic.

Fifth and sixth grades.—Judgment in art discussion, color, form, technic, use, choice of essentials in representation. Recognition of merits and use in the various forms of art. Acceptance of art as a need in life. Analysis of commercial product, finding the value of art as used here.

Sixth grade.—Relation of art to manual training and domestic art.

SABBATICAL YEAR FOR TEACHERS

The *Official Bulletin of the Cincinnati Teachers' Association* publishes in the September issue an editorial favoring the plan of a sabbatical year for teachers. The editorial gives information about the adoption of this plan in three school systems and is here quoted in the hope that the information which it contains may be used in inducing other school systems to consider such an arrangement.

The practice of granting sabbatical years to teachers is steadily growing. Superintendent McAndrew of Chicago recently recommended to his board of education that teachers and principals be granted a year's leave of absence every seventh year for study and travel. The leave is to be given with pay, less the cost of a substitute, and teachers will be eligible for such leave after seven years of continuous service. In New York City, a committee of teachers presented to the administration a plan for sabbatical leave for travel and study. Their plan proposes full compensation to the teachers minus the cost of a substitute. According to this arrangement, the scheme entails no financial burden upon the board of education. Indeed, the sabbatical year is already in force in a few cities. Minneapolis teachers who have served ten years may now have a year's leave on half-pay. Commenting on the Boston plan, the September *American Educational Digest* says, "The Boston schools have for some years back been granting a sabbatical year. Superintendent Burke is quite enthusiastic about it. He says there is no overwhelming demand on the part of the teachers to take advantage of the opportunity, because of the financial loss involved, but enough teachers avail themselves of the opportunity to justify the existence of the plan. Teachers may obtain leave of absence for travel and study, he says, and those who have been in the service twenty years are permitted two years' leave at half-pay without restrictions of any kind. The superintendent of the Boston schools declares that in every case the supervisors have noticed a marked improvement in the work of the teachers when they return to duty, because there is a new angle, a new point of view, and the added stimulus to the work."

The Pueblo plan is more complicated than either of the foregoing ones. Here are its provisions: "The plan is permissive, not mandatory. For the first two years, only teachers otherwise eligible, who need additional training to meet state certification standards, will be considered. Teachers are required to file written applications with the superintendent. The sabbatical plan involves the following points: a teacher of ten or more years of service in the Pueblo schools may be granted a leave of absence to improve her professional equipment as a teacher. She will be allowed one-half of her annual salary, but no teacher will receive during such sabbatical years more than $900. Not more than three of the teaching force may be absent at any time. The college, university, or normal school which the teacher on sabbatical leave proposes to attend, as well as the character of the courses selected, must be approved by the superintendent of schools. When more than three teachers apply for sabbatical leave, the superintendent will select the applicants to whom leave shall be granted; the selection will be based upon length of service and the relative advantage to be derived by the schools. When there are not sufficient applicants to complete the maximum quota for the full sabbatical year, as stated, the superintendent may extend the rule to apply to a semester or a term on the one-half salary basis" (*American Educational Digest*, August, 1924).

SCHOOLS AND GENERAL SOCIAL AND POLITICAL CONDITIONS

Teachers often feel that their work is trivial and that they are very remote from the great social and industrial movements which characterize the age in which they live. If they could only be made to realize the broader significance of school training as a basis for national life, they would understand that democracy in all its aspects is intimately related to education.

A recent editorial in the *New York Times* discusses the importance of literacy in a way which ought to bring encouragement to every teacher.

When Galeotti, the shrewd astrologer in *Quentin Durward*, told Louis XI of the changes that the new invention of printing must bring to pass, the equally shrewd monarch asked whether these changes would happen in his own time. Informed that they would not, he promptly lost interest. It is possible still to ask King Louis' question with regard to the majority of the inhabitants of the earth. Literacy has spread slowly. But signs multiply that within the lives of persons now living the greater part of the human race will be found in the literate group.

The majority of the inhabitants in countries containing among them at least two-thirds of the population of the world cannot read a word. India and China alone contain half a billion illiterates. Russia has approximately another hundred million. Fully a hundred million in Africa cannot read, and in Latin America possibly fifty millions. The peoples of the East Indies and of Asia outside of India and China number many millions of non-readers. The total of illiterates for all these lands approximates nine hundred millions, to which must be added the considerable illiterate minorities of the United States and of Europe.

The International Commission on the Removal of Illiteracy has plenty of work cut out for it. Yet there are prospects that a vast change in the educational map of the world may occur. In 1911 in India only about 6 per cent of the inhabitants were reckoned as able to read. Eight years later the schools of India had over seven and a half million pupils. Plans looking toward Indian self-government depend for their eventual success so greatly on the spread of education as to offer a powerful incentive to the work of the schools.

Mexico has emerged from revolutions with a government relying on the support of the peon class and has sought to strengthen that class by educating it. Mexico has a compulsory-education law and, what is more, set apart for educational purposes more than one-seventh of the total of the budget of 1923. Some two thousand persons volunteered their services as teachers when the new educational policy started to function in 1921. Political change in Mexico

has removed the class that kept itself in power by withholding knowledge from the bulk of the nation and has installed a group that relies on the training of the popular understanding.

A similar reversal of the motives of the ruling class has occurred in Turkey, where a monarchy has given way to a government relying on parliamentary forms and the support of the intelligent Ottoman population. Several dark corners of Europe have felt a like stirring. Dependencies such as Poland, Slovakia, and Bosnia, where formerly alien domination found it either impolitic or impossible to carry on popular education, have now come under forms of self-rule that offer a strong inducement to the governments to educate their supporters. It is no accident that Poland started at the earliest moment on a campaign of general schooling and for 1922 reported three millions, a number equal to one-tenth of its population, as attending the elementary schools.

If the Great War had ended in a victory for military monarchies ruled from above, there would no doubt have been quite other results in the educational field than those observed today. At present governments seek to build up their foundations by reducing their illiterates wherever political unity and financial means permit. A continuation of the educational movement now in progress would in the next fifty years turn the minority now able to read and write into a majority of the world's population.

COMPULSORY-ATTENDANCE LAWS

The Bureau of Education issued a number of interesting items for publication during Education Week. The following is so good a summary of the current situation regarding compulsory education that it is reproduced in full:

When Mississippi enacted its initial law on the subject in 1918, it was the last of the forty-eight states to pass a law requiring the attendance of children at school. Some of these laws are not yet very stringent, but the tendency is to make them stronger as time passes and experience points the way. For example, a dozen years ago hardly a state required attendance above the age of fourteen. Now thirty-two states fix sixteen as the age to which attendance must continue, unless certain prescribed conditions have been previously met; and seven other states fix ages higher than sixteen as the upper limit.

The prevailing lower age limit is seven; twenty-seven states name this as the age for beginning required attendance. In two states six is the lower limit. Clearly the present standard in America is that children between the ages of seven and sixteen must go to school.

The attendance required each year is an important element in a compulsory-education law. Exactly three-fourths of the states require attendance for the full public-school term. In only two cases is the minimum requirement less than one hundred days annually.

Of the thirty-two states requiring attendance to the age of sixteen under certain conditions, a number make the requirement absolute up to fourteen, but attendance between that age and sixteen is contingent upon educational attainment. The standard which would seem to be taking definite form here is this: That the child must attend school until the age of sixteen is reached, unless, being over fourteen, he has finished the elementary grades, has obtained an employment certificate, and has gone to work.

Exemptions from the operation of attendance laws are very similar in the different states. The exemptions of most frequent occurrence are: (1) a child attending an approved private or parochial school; (2) the physically or mentally incapacitated, usually as shown by a physician's certificate; (3) a child residing more than a specified distance, as for example, two and one-half miles from school, unless transportation is furnished; (4) one over fourteen whose services are needed for the support of a dependent parent or parents. The tendency is toward reduction of the number of exempt classes. The provision of public conveyance for school children tends to take care of the child living at a distance from school, and widows' pensions are reducing dependence upon child labor. Exemption for the purpose of farm work is fast disappearing from attendance laws. A brief temporary exemption for the purpose of religious instruction is found in the laws of a few states, such as Illinois, Iowa, Michigan, Minnesota, and South Dakota.

On the whole, compulsory attendance at school has gained much ground in recent years. Age limits have been extended; the required annual attendance has been increased; educational requirements have been raised; the number of classes of exempted children has been reduced; and the means and methods of enforcement have been appreciably improved.

TYPES OF LEARNING[1]

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The first article of this series called attention to the fact that educational psychology concerns itself in general with a discussion of individual traits and capacities while the school concerns itself chiefly with the transformation of the individual so that his reactions shall be not those which his natural impulses dictate but those which are demanded by organized society. A number of examples were briefly discussed in which the individual was shown to be in process of change from a person responding in his own untrained way to the demands of civilization to a person who conforms to convention. The present article will carry the discussion forward by offering an analysis of the learning process which aims to show that much of the learning which is accomplished in schools is of a type which would be quite impossible without a social background.

A kind of learning which is very common in the experience of every member of a modern community is that which is involved in the use of a machine. One learns to drive an automobile, or to use a sewing machine, or to run a harvesting machine, or to tell time by a watch, or to call up one's friends on the telephone. In each of these cases the use of the mechanical or electrical device may be acquired without the user having any knowledge whatsoever of the internal construction of the thing which he is employing. The machine has parts which have been put together by someone else. The user gets the benefit of the maker's skill but is not called on to go through all of the steps through which the maker went in assembling the machine. The user thus becomes the last of a series of co-operating individuals. His performances with the aid of the machine are not merely the results of his personal abilities and personal skills. By the output of certain very simple

[1] This is the second of a series of articles on educational psychology.

units of personal energy the user sets in motion forces which represent long accumulations of thought and skill.

There are instances in which the user is acquainted with the internal construction of his machine. The interesting point to be noted with regard to such cases, however, is that the skilled machinist, when he uses the machine, does not have to stop and think of each wheel and lever that he calls into play. As a user, he can dispense with much of his knowledge and for the purpose of the moment he needs only the skills which are equally at his command and at the command of the person who only uses and does not understand the machine.

We may carry the illustration farther. There are various kinds of knowledge of the internal construction of the machine on the part of those who know more than merely how to use it. There is the kind of knowledge which is possessed by the repair man who, through practical demonstration and contact, knows the parts of the machine and the way in which they act upon one another. More profound by far is the knowledge of the constructing engineer who understands in detail the mechanical principles involved in making the parts and putting them together. Even at this level of what may be called complete understanding, there are differences which are of great importance to the psychologist and the teacher. A knowledge of the mechanical principles embodied in a machine may be gained through study by one who has no mechanical initiative. Such a student of machinery is shown how wheels and pistons have been fitted together and why they are of the dimensions and forms which they exhibit. The student of machinery who has initiative, on the other hand, not only sees what has been done but also looks beyond the present structures and thinks of other combinations which might be tried. The man with initiative leads; the man without initiative merely follows where others have opened up the way. They are both in possession of highly technical knowledge, but their knowledge is of different types.

The various kinds of mechanical knowledge which have been described in the foregoing paragraph are all products of human co-operation. The truth of this statement is perfectly evident with regard to a user of a machine. The machine had to be put together

for him. It is less evident for the constructing engineer; but we have only to think of the facts of history for a moment and it will become manifest that the most highly skilled mechanic is dependent on accumulated social experience. The designer and maker of machines uses materials which the race discovered only after the most arduous experimentation. He begins his thinking with perfected devices, such as the wheel and axle and the lever, which required the span of many generations for their discovery. A single human life would not be long enough to permit the rediscovery of those items of knowledge which are essential to the operations of the constructing engineer. His inventive genius is freed from the necessity of discovering first principles, and his mind can use the products of racial effort in evolving refinements of that which has been given to him by other minds.

The distinctions which have been pointed out between mere users of machinery and designers and constructors can be carried over without elaborate restatement into the world of purely intellectual devices. Every child in modern civilization is taught how to use the alphabet. History tells us how this very useful and intricate device was invented. For a long period the Egyptians made records for their monuments by drawing sketchy outline pictures. They even went so far as to relate these pictures to the words which they used in oral language, and there is some evidence that they used pictures to represent sounds. With all of their genius and experimentation, however, the Egyptians did not arrive at a sound alphabet.

The other great civilization of antiquity, the Chinese civilization, struggled with the same problem. The Chinese made less progress than did the Egyptians, and even today they write in symbols which are pictures rather than representations of sounds.

The effort to devise an alphabet had to continue beyond the first ineffective representations of sounds and ideas by means of drawings. It required, as one historian has put the matter, the transplanting of the half-successful Egyptian achievements to a new national soil before the invention of a true alphabet was achieved. Somewhere in Asia Minor human minds took the momentous step of representing sounds by simple outline figures,

and a new device was brought into the world. The generations which followed that period of invention needed only to learn the use of the alphabet. There is no necessity of carrying the ordinary child back to the beginnings of things with regard to the alphabet any more than there is a necessity of taking the purchaser of an automobile to the factory and introducing him item by item to the parts of his machine. The user of the alphabet and the driver of an automobile are users, not designers. They will have to give some time to the acquisition of adequate control over these ingenious inventions. There will have to be a period of learning in both cases. The type of learning, however, will be one which takes advantage of a completed mechanism.

We may very properly carry the parallel examples much farther. It is altogether undesirable for the purchaser of an automobile or the learner of the alphabet to attempt at first to enter upon the rôle of the expert mechanic. Any readjustment in either of these highly developed devices calls for the most refined skill. The learner of the alphabet is sure to find that all society is determined that he shall use the letters as they are without departure from convention. The maker of the automobile is likely to cancel his guaranty if he finds his seals broken by the tinkering novice.

It is proper to pause at this point and call attention once more to the utter inadequacy of a psychology of the alphabet which deals only with individual traits. Now and then some enthusiast for individual psychology attempts to tell us what mental processes are involved in spelling. With all of the confidence of one learned in the physiology of the individual nervous system, such an analyst begins by saying that the first step in learning to spell is to receive on one's retina a visual impression. This visual impression, we are further informed, is a chemical process—in fact, a photochemical process—and it excites certain chemical processes in the optic fiber, and so on.

The trouble with this kind of a description of spelling is that it is profound in the wrong direction. It is profound physiology and as such sometimes throws the reader and more often the writer into a scientific ecstacy which may momentarily gratify vanity but

will be of very little help in promoting the work of the classroom when spelling has to be taught.

Spelling is an effort on the part of the individual to use an elaborate mechanism of expression which has been evolved by long trial. Race after race has contributed to the trial. Some of these races used guttural sounds and harsh vowels. Some spoke only in soft flowing syllables. They used a great variety of materials for their writing, and they handed down to their descendants curious outline forms which were more permanent than their spoken words. With these outline pictures generation after generation made records of their national ambitions and of some of the trivial transactions of their daily lives. Finally, in 1924, a youthful member of the race, with very little outlook on life, is brought into contact with this intricate mechanism which embodies ages of human effort. While it is true that he has chemical processes in his retina, that is by no means the initial fact; nor is it a fact of major importance for the student of the spelling process. The initial fact is that the newcomer in civilization encounters an institution to which he will have to conform. He is to be introduced to this institution in such a way as to induce an attitude of mind which will make him desire to master first its use and possibly later its intricate nature. If he ever learns to use the alphabet, it will not be primarily because of chemical processes in his retina. He is not primarily a receiving individual when he begins to spell. He is an acting individual. His muscles are tense; he is about to do something. The first step in spelling does not begin in the eye; it begins in the organs of behavior. If modern psychology has learned one lesson more fully than any other, it is that no mental process begins with sensations. Mental processes begin in an individual who is about to accomplish something. Sensations merely guide him. The teacher who wants a child to spell has to induce the child to express something. When the child begins to write, the teacher can introduce him to the perfected mechanism which the race has evolved and let him see that this mechanism is of such importance to him that he will want to use it. The teacher can then give the pupil lessons in the use of the machine. The skilful

teacher will not try at first to make the child who is learning to spell simple words into a student of etymology. The individual may in mature life want to look into the inner structure of language, but for the time being his attention will be fully and productively absorbed if he is allowed to use the machine.

What has been said about the use of the alphabet might perhaps have been even more emphatically presented if we had used the number system as our example of a mechanism devised by civilization.

The number system is so intricate and delicate a mechanism that the history of its perfection falls well within the period of medieval and modern times. We still use on our monuments and on ceremonial occasions the clumsy number system which is indigenous to Europe—the Roman numeral system. This system is, in its structure, far in advance of the number systems possessed by most semi-civilized races, but it yielded at once in the competition with that perfect mechanism which was imported into Europe from the Orient, the Arabic numerals. These came to be used widely in the Occidental world from the sixteenth century on. They were brought to the Western nations by merchants, practical men who recognized their usefulness and preferred them for the calculations of trade to the Roman numerals which they could manipulate only with the aid of the abacus.

The presence of so perfect a device for calculation as the Arabic numerals has had a whole train of secondary consequences. Science has progressed in the direction of exactness because it has an instrument for exact thinking. Even the popular mind has been carried along in the direction of explicit and clearly defined quantitative thinking. One can no longer describe a city as large and full of people. Everyone wants to know, in terms of the latest census reports, just how full of people the city is. In a review of his possessions, the common man is not content to say that he has enough. He is not satisfied until he has determined just how much he has and how his holdings compare with those of his neighbor.

This is not the place to attempt a history of the Arabic numerals and their uses. For our present purposes the most important fact is that children have to be brought into contact with this system.

What kind of contact shall be attempted in the schools? The fact is that the schools are not succeeding in any satisfactory degree in introducing children to numbers. Arithmetic is the source of more failures than any other subject in the elementary-school curriculum, and it is safe to venture the statement that there is no source of mental confusion more effective in making children unhappy than arithmetic as it is taught at the present time.

Let us try to answer the question, What kind of contact with number shall be attempted in the school? In terms of our earlier analysis, we must keep in mind the distinction between learning to use a machine and understanding its mechanism. One can learn to add and even multiply and know very little about the inner rational meaning of these processes.

At the present time there is great uncertainty in the minds of teachers about what they are doing and what they ought to undertake in the classes in arithmetic. Part of the exercises—they are usually called drills—are devoted to cultivating speed and facility in some of the simplest uses of number. There is in the drill exercises no effort at instruction of an explanatory type. The pupil is merely going through his paces again and again in order that he may become perfect in his responses to number questions.

There is another kind of training which deals with uses. This is what we call application or the practical use of number in the concerns of life. Interesting questions and endless disagreements arise in the presence of even so simple a distinction as this. Should long drill in number combinations precede application, or should the pupil learn combinations as a part of his training in applications?

Let us go back for a moment to the simpler case of learning to run a machine. Should the novice who is learning to use a lathe practice for some time on materials which are useless, or should he try from the first to make something? Should the person who is learning to drive an automobile go back and forth in the practice yard, or should he start on a journey?

Finally, let us ask with regard to the number system whether the elementary school should attempt to open up the machine to its pupils and show them the mechanism. Can the ordinary man understand number, or is he to be satisfied when he can use it?

Can the ordinary teacher do more than explain the uses of number? Can the ordinary man be expected to go beyond the first steps, or at most the second steps, of learning?

There is doubtless much confusion at the present time in the schools. Some of the exercises in number are certainly given a place in the course for no purpose other than to try to give pupils a complete scientific view of number. Some of the reformers of arithmetic make this clear when they tell us that number is essentially ratio and that children will never get on well until they are taught the meaning of ratio. The older instruction in arithmetic which reduced all examples to the "rule of three" was a recognition of the practical utility of the ratio idea. That earlier instruction apparently stopped short, however, of teaching the inward meaning of ratio. It taught the use of ratio and in most cases went no farther.

The questions which are suggested by these contrasts in the extent to which number may be understood can perhaps be summarized in a hypothetical inquiry about the method of organizing the school program. Suppose that someone had the courage to organize for the ordinary pupils in the elementary school a course in number which taught only the uses of number and made absolutely no effort at scientific understanding of number. What would be the result? This supposition, while it is proposed as a hypothetical question, is not very different from the proposal made by some of the leading authorities on the curriculum. Would the consequences of such a program be loss of insight? Would the next generation have in it more or fewer members than our own who demand precision of thinking? Would the school mortality in the form of nonpromotions decrease?

No one who is acquainted with the rudiments of scientific method will attempt an off-hand answer to such questions. The formulation of the questions serves, however, to point the direction in which experimental inquiry should be made. The questions aim to make impossible any such ideas as those which have sometimes been advanced in educational psychology. There is no such thing as a number sense or an instinct for exactness. There is no such stage in mental life as a natural period for the sudden manifestation of number ability.

Number is an intellectual institution evolved through long ages by a race which was using it now for this purpose, now for that. The number system gradually took on a form which is as fixed and permanent and as independent of individual interference as any material object. The present stage of history is one in which children are introduced to this intellectual institution and invited to use it and frame their habits in accordance with its demands. They are given an opportunity later in life, if their patience endures, to look into the laws of the number system and to discover, if they become specialists, some of the new implications which no one else has pointed out. A few people in each generation will contribute something to this institution. Most people will have only the most sketchy knowledge of its structure. We come back to the question, Will it be enough for many children merely to use number without understanding its structure?

This kind of analysis confirms the statement which was made in the first article of this series. The psychology of arithmetic is not the psychology of the individual; it is the psychology of the race. When an individual uses number, he is not exercising the powers of his individual mind. He is using the intellectual energy of the race which evolved the number system. Even if he does not understand the reason why he can safely do so, he uses the number tables with an assurance of their validity which springs from social sanction. Every number, with its placement in a series is a result of racial experience and carries a freightage of meaning which the individual may only partly comprehend but from which he will derive advantage whenever he thinks in number terms.

Not only is number a reinforcement of the thinking of the individual; it is also a controlling power. The individual in modern society knows that he must conform in his conduct to the laws of this social institution. If someone counts out certain possessions and puts them in my charge, I know that my responsibility is exact and detailed. I may not like arithmetic, and I may have failed in all of my school work. My respect for number will, however, outlive these unfavorable conditions. All society is prepared to enforce the demand that whatever is meted out to me shall be counted back with integrity. Number is an institution which controls the individual.

This statement regarding the dominance of the number system over the individual throws a very interesting light on the psychology of elementary education. It is customary to describe the elementary-school curriculum as made up of that body of knowledge which is essential to the proper training of every individual. Number has very generally been recognized as part of the elementary or universally required body of knowledge. Curiously enough, there is no more bitter disagreement among writers on arithmetic than the disagreement as to how much training in number shall be given, when it shall begin, how the various exercises shall be distributed, the purpose of such training, and where it shall end as the pupil passes into the upper grades and high school.

Does not the failure to teach arithmetic adequately and the lack of agreement as to its place in the scheme of education make it evident that our analysis of this subject has not been carried far enough? We have had two decades of measurement of results in education. We have held pupils and teachers responsible for the deplorable results revealed by tests. Is it not time that we ask some of the fundamental questions about the relation of the individual to social demands? Is it not proper to urge as an important phase of the movement toward the reorganization of the curriculum that the aims of education be defined in terms of the kind of knowledge which we are to cultivate? If what we need is training in the use of number and that alone, we shall proceed in one fashion. If what we aim to cultivate is knowledge of the inner structure of the number system, then we shall proceed in another fashion.

Our three examples of the learning process—the first, the learning of machine technique; the second, the learning of the alphabet; and the third, the learning of the number system—are not by any means the most striking examples which might have been chosen to confirm our plea for social psychology as a basis for educational discussions. We might have plunged at once into such complex problems as those connected with the teaching of literature and national ideals. We might have asked how the individual is to be prepared for his place in the economic scheme of modern industrial and commercial life. We might have asked how the school is to train pupils in honesty and the other moral virtues.

Such questions would perhaps have called attention more vividly than do the cases discussed to the necessity of fitting individual traits to social demands. The evidences which these undiscussed examples suggest in support of the main thesis of this series of articles will not be lost because of our treatment of machines and the alphabet and number as illustrations of social co-operation.

One warning may perhaps not be out of place. In arguing for the recognition of the psychology of social institutions, it is by no means denied that there is a psychology of individual mental life. What is said is that individual psychology should be studied as a part of the more inclusive science of the psychology of mankind. It is not denied for a moment that the individual has eyes and ears and hands. It is pointed out, however, that the things at which children look, the sounds to which they listen, and the objects which they handle are determined not by individual impulse but primarily by the demands of the social group in the midst of which the individual moves and has his social contacts.

What teachers-in-training and teachers-in-service need is not more descriptions of retinas and hypothetical neurones in the individual cerebrum but more emphasis on social institutions and the relation between these and personalities which are developing away from instinctive forms of behavior toward social conformity.

AN OPPORTUNITY AND ADJUSTMENT SCHOOL OF THE INTERMEDIATE TYPE

HOMER C. WILSON
Luther Burbank Intermediate School, Fresno, California

In July, 1921, it was found that of the pupils in the elementary schools of Fresno, California (Grades I–VI, inclusive), 61.5 per cent were making normal progress; 2.9 per cent were making rapid progress; and 35.6 per cent were making slow progress. Of the pupils making slow progress, over one-half (18.5 per cent of the total number) were retarded one year; approximately one-fourth (8.7 per cent of the total number) were retarded two years; and approximately one-fourth (8.4 per cent of the total number) were three or more years behind the grades in which their chronological ages would normally place them.

There were many excellent reasons for attempting to remedy this situation, the most important being the following: (1) These overage pupils and younger children could not be well cared for in the same classes. (2) It was undesirable to have these pupils, many of whom were of high-school age, on playgrounds belonging to young children and adapted primarily to these younger children. (3) These retarded pupils were responsible, in large part, for the overcrowding in several of the elementary schools.

Accordingly, it was decided to recommend that special schools be established for all boys and girls thirteen years of age or older who have not graduated from the elementary school. On July 14, 1921, the board of education approved a recommendation reading as follows:

> In order to provide more adequately for the educational needs of those pupils who are of secondary-school age but because of language handicaps, irregular school attendance, or other reasons have not had sufficient elementary-school training to be enrolled in a school of secondary grade, there are hereby established two special schools to be known as schools of intermediate grade. The course of study in such schools will be adapted to the needs of certain groups of pupils and may change as these groups change. In certain subjects

the work will regularly be of elementary grade, while in other subjects it will regularly be of secondary grade.

The course of study, as worked out in the Luther Burbank Intermediate School, gives particular attention to instruction in the English language and arithmetic, these being the two subjects with which most pupils have trouble. On entering the school, all pupils are given standard tests in reading and arithmetic and are grouped in classes according to ability. In addition to the work in reading and arithmetic there is instruction in physical education, music, general science, industrial art, spelling, shopwork and agriculture for the boys, and home economics and practical home-making for the girls. Geography, history, and hygiene are correlated with other subjects. The work in English and arithmetic is of elementary grade, adapted to adolescent pupils, while the work in music, physical education, science, and industrial subjects is of junior high school grade. All work is departmentalized, and numbers are used instead of grades to designate groups.

The non-English-speaking pupils are grouped separately and take all work except physical education under one teacher. The pupils in this group, known as the bilingual group, join the regular groups as soon as they have mastered enough English to comprehend the work and have acquired a general knowledge of American laws, customs, institutions, and ideals.

The school day is divided into seven periods of forty-five minutes each: forty minutes of class work and five minutes for change of classes. The day begins at 8:30 A.M. and closes at 2:45 P.M., with an intermission of an hour from 11:30 to 12:30. This arrangement gives the pupils an opportunity to do outside work after school.

All pupils are required to take English and arithmetic, but the amount of instruction in these subjects is adjusted to the abilities and needs of the pupils. Other subjects are tried until programs are found which are suited to the particular needs of the individual pupils. No pupil is continued in a subject if lack of interest and progress is shown after proper trial. Wherever possible, the work of a department is planned and adjusted to fit and supplement the work of the other departments. The aim is to make the course elastic enough and broad enough to provide an opportunity for

every pupil. Daily conferences and discussions by the faculty over the luncheon table keep the work moving in a synchronized and harmonized fashion.

The science taught is the science of everyday things, including hygiene, sanitation, and social problems.

The course in agriculture includes study and demonstration work in the classroom and practical gardening out-of-doors. Practical study is made of vegetables and flowers suited to local conditions.

Practical work in plant propagation is a part of the course. This includes the use of hotbeds, fertilizers, cultivation, and irrigation. Flowers are grown and used in beautifying the classrooms. The garden space is divided into plots, and each pupil who takes the course is given a plot of his own to plant and care for. Many of the vegetables used in the cooking classes are grown in the gardens. The surplus is used by the pupils or sold.

The work in physical education includes personal hygiene, corrective work for those who need it, setting-up exercises, and games. Most of the work is carried on in the open air. The aims of the course are a clean mind in a clean, healthy body and good sportsmanship.

The shopwork includes the use and care of hand tools and the making of simple articles of practical use in the home and school. Repairs are made on articles brought from home by the pupils, such as furniture, locks, garden tools, shoes, bicycles, faucets, etc.

The course in music includes music appreciation; two-, three-, and four-part singing; ear training; sight reading; silent reading; a study of the artists; and the singing of folk-songs, popular songs, and more serious compositions. The whole is adapted to adolescent voices and the abilities of the pupils. The glee club is especially good, ranking among the best in the city.

The course in art has been developed along the lines of interest and usefulness. It includes poster work; work in pencil, charcoal, crayon, and water colors; the making of transparencies, silhouettes, lamp shades, place-cards and favors for banquets and parties, and birthday and Christmas cards; clay work; and stencil work on wood and textiles. Notebooks are made and bound in oilcloth for the cooking department. All spelling blanks used in the school are made and bound in the art department.

The coping-saw work includes toys, door-stops, doll furniture, etc., finished in bright colored enamels. In addition, many articles are brought from home by the pupils, such as jars, vases, bottles, salt and pepper shakers, coat hangers, metal boxes, cans, trays, etc. These are decorated with attractive designs in colored enamels with pleasing effect. The pupils make practically all of their Christmas gifts and often have a large surplus.

This year the boys have been particularly interested in toy-making. Each group is organized with a business manager and an assistant manager elected by the group. These officers lay out the work, see that each member is kept busy, check waste and carelessness, and keep the work moving under the supervision of the teacher. Each pupil keeps a record of the time and material used in the making of each article and figures the cost of production. There is keen competition among the various groups, each striving to outdo the others not only in the quality and quantity of the art work but in general school standing throughout. These groups are planning a toy sale in the near future. They aim to make their part of the art course as nearly self-supporting as possible.

In reading, the pupils are grouped in classes according to their abilities as shown by standard tests. The method of instruction is individual silent reading. Graphs are made in order to show the pupils their progress.

The pupils are developing a school library with funds contributed voluntarily. This project was started a little over a year ago. There are 275 volumes in this library at present, chosen with particular reference to the needs of the pupils.

The course in English consists of much practical work in both oral and written English, suited to the vocabulary needs of the various groups.

In arithmetic, the pupils are first grouped according to ability. Diagnostic tests show where previous training has failed to function. The plan is to strengthen weaknesses and build a firm foundation. The pupils proceed as rapidly as they can master the work through individual and group instruction.

In the cooking department the girls learn in a practical way to select food supplies; prepare, cook, and serve meats, vegetables, and plain pastries; make salads, jellies, jams, and marmalades; can

and preserve fruit; set and decorate a table; wash dishes; sweep and clean; and scour and scrub.

The home-making group is made up of the older girls. Each girl makes a scrapbook in which she keeps a record of complete plans for a home and its equipment, suited to her station in life. The plans are selected from books of house plans and from magazines. Particular attention is given to the size of the plan and the arrangement of the rooms. Furnishings, hangings, and all equipment are also given special attention in order to keep the whole well balanced with respect to convenience, compactness, and harmony in finish and detail, and to keep the cost within the range of reasonable possibilities for the individual pupils as prospective home-makers. Equipment and furnishings are planned in detail. Stores are visited, materials examined, and prices obtained so that each scrapbook, when completed, contains a home plan and all equipment, even to the pattern of the silver and china, the color and material of the hangings, the kind and quality of the cooking utensils, etc., together with the complete cost at present-day prices.

The school is not equipped to give a practical course in home furnishing and decorating, so it is done by drawings, cuts, and pictures.

In the sewing department the girls learn both hand and machine sewing. They learn to renovate and make over old garments. They learn to mend, patch, darn, and utilize scraps. They learn to embroider and crochet. Garments made by the girls include underclothing, nightgowns, pajamas, aprons, and dresses. Some sewing is done for people outside of the school and for welfare agencies.

Each teacher devotes one period a week to giving instruction and practice to pupils in things everyone ought to know: introductions; invitations; table manners; how to conduct one's self as a host or hostess or as a guest; how to order a meal in a restaurant, in a hotel, or in a dining-car; how to make preparations for a trip by train or by boat; what to do when one goes to a hotel; how to conduct one's self in a public gathering, on the street, in an elevator, and on a street car; what to do in emergencies; and a host of other things.

The following are some advantages of the plan:

1. Adolescent pupils are eliminated from the elementary schools. This solves, in a large measure, the discipline problems in these schools.

2. The pupils are grouped according to ability. This produces a better grade of work and less discouragement.

3. The pupils are advanced from group to group as fast as they accomplish the work. Many are able to overcome entirely their retardation handicap. Some even pass their normal grades.

4. The course of training changes as the needs of the pupils change. This permits the development of the pupils according to their ability, regardless of whether this development conforms to the tenets and standards of the formal course of study.

5. The pupils find a purposeful relation between school training and their individual problems and begin to feel a real need for this training. This felt need generates the motive power for their further progress.

The school is unique in many respects. The most important features are the following:

1. The wide range in the chronological ages of the pupils—eleven to twenty.

2. The large number of nationalities—average number, about twenty.

3. The rapid turnover—practically one-third of the total enrolment is graduated each semester. Through graduation and moving, the pupil population of the school is almost entirely changed every year.

4. The large amount of retardation—all pupils are retarded from one semester to eight years.

5. The varied reasons for retardation—average number of reasons, about twenty, with sickness and moving probably the most frequent.

6. Freedom from supervision by special subject supervisors.

The results speak for the soundness of the plan and the quality of the work done in the school. In 1923 the school as a whole showed an improvement of 23 per cent in reading and arithmetic, as measured by standard tests. An improvement of 24 per cent

for 1924 is shown, while improvement in the various groups ranges from 14½ per cent to 48 per cent.

A group of eighty-six pupils graduated February 1, 1924. The net gain made by this group during the one semester, September 17 to February 1, is shown in Table I. The graduating group for the semester ending June 13, 1924, contained about the same number of pupils and showed as great a net gain. This makes a total annual

TABLE I*

Number of Semesters Gained	Number of Pupils	Total Number of Semesters Gained
7	1	7
6	1	6
5	2	10
4	2	8
3	10	30
2	25	50
1	32	32
0	13	0
Total	86	143

*Net gain in school years, 71.5 years; net gain in school years per pupil, .83 years.

gain of approximately 143 school years. Since the average annual cost of educating a pupil in the elementary schools of the Fresno school system is $70.76, not counting capital outlay, the net saving to the system made by the graduating groups alone is an important consideration, to say nothing of the saving made by other groups. Perhaps one of the greatest values resulting is the creation of a new outlook on life in the minds of the pupils, accompanied by the desire to do and to achieve.

THE HEALTH SCHOOL OF JACKSONVILLE, ILLINOIS

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The Josephine Milligan School began as an enterprise of the Anti-Tuberculosis League. The work has gradually been taken over by the public schools until now it is entirely under the control of the board of education. The only connection which the Anti-Tuberculosis League has with the school is through paying for the noonday lunches of the indigent pupils.

The accommodations consist of an old residence which has been worked over and equipped as a clinic and a one-story rectangular open-air building about 25×60 feet in size. On the first floor of the clinic building are the principal's office, dining-room, toilet rooms, and shower baths. On the second floor are a waiting room and three special clinic rooms, one for the general physical examinations, one for the dental examinations, and one for the eye, ear, nose, and throat examinations.

The school building is located back of the clinic building and is divided into two classrooms. Both classrooms are equipped with movable furniture and folding cots. The cots are for use during the afternoon rest period. These schoolrooms are each heated by three steam radiators, and the rooms are always comfortable. The temperature seldom gets below 60° F. The floor of the building is always warm. This is accomplished by the use of a ventilating fan used to draw the heat from a nearby tunnel through which pipes carry steam to heat the junior and senior high schools.

The school is conducted for the benefit of the children who are normal mentally but below par physically. Only the primary and intermediate grades are included.

The following types of children *are not* admitted: (1) the mentally defective child, (2) the unruly or incorrigible child, (3) the active tubercular child, (4) the child who has any disease which is contagious.

The following types of children *may be* admitted: (1) the child whose weight is below normal, (2) the child who tires easily and seems less vigorous than the average, (3) the nervous and irritable child, (4) the child who is subject to frequent colds and other diseases, (5) the child who has recently had scarlet fever, diphtheria, or a similar disease, (6) the child who has heart trouble, (7) the child whose parents or near relatives have had tuberculosis, (8) the child whose parents agree to co-operate with the school nurse in correcting the physical condition of the child.

Children gain admission to this school through the recommendation of the clinic. Transfers are issued by the superintendent, who takes into consideration the attitude of the parents and a report from the principal of the school which the pupil has been attending. Pupils are returned to the regular schools when satisfactory improvement has been made.

Admission to the clinic is obtained through the school nurse or on the recommendation of the family physician. The clinic meets regularly the second Wednesday of each month from 9:00 to 11:00 A.M. During the first and second weeks of each semester there are usually two or three special clinic days. The doctors of the city volunteer their services, and the clinic is under the direction of the county health officer.

Aside from the emphasis on the health work, the regular grade school work is taught. Two teachers are in charge, one for the primary grades and the other for the intermediate grades. Each pupil keeps, under the supervision of the teacher, a weight chart and a sleep chart.

The weight chart usually shows a curve which at first rapidly approaches the normal weight line. The curve then continues its upward trend, but the gains shown are not so great. Any loss of weight due to sickness immediately shows up in the chart. The school has not been operating under the present plan long enough to provide any data as to the permanency of the improvement. The pupils who return to the regular schools remain under the close observation of the school nurse.

The sleep charts show that portion of the day which is spent in bed. These charts show irregular hours very vividly and have as

much effect on the parents as on the pupils. Frequently a child's failure to improve can be explained by reference to his sleep chart.

Supervision of the diet constitutes a part of the regular school program. This work is carried into the homes by the school nurse. The children are served milk at the recess period in the forenoon, and at noon they eat lunch at the high-school cafeteria which is across the street from the health school. The food is selected by the school nurse and is paid for by the parents except in the case of those who might find it a hardship. In these cases the Anti-Tuberculosis League supplies the necessary funds.

Twenty-eight pupils were admitted to the school for the following reasons:

1. Tuberculosis contact. Bronchial cold that had not cleared up.
2. Enlarged cervical glands. Nervous. Malnutrition.
3. Mitral lesion of the heart from influenza in 1922 not well compensated.
4. Malnutrition. Acidosis.
5. Malnutrition. Recovering from scarlet fever.
6. Rectal operation last year. General physical condition below par.
7. Malnutrition.
8. Malnutrition. Very nervous. Had operation for removal of tonsils and adenoids.
9. Moisture on lungs. Brother died of tuberculosis. Sputum examinations negative.
10. Tuberculosis contact.
11. Suppurating gland of neck last spring; now healed. Lungs suspicious. Malnutrition. Advise removal of tonsils and adenoids.
12. Enlarged cervical glands; painful at times. General physical condition poor. Advise removal of tonsils and adenoids.
13. Malnutrition. Moisture on lungs.
14. Malnutrition. Heart bad.
15. Malnutrition. Frequent sore throat. Advise removal of tonsils and adenoids.
16. Appendectomy. Tubercular peritonitis. Intestinal disturbance.
17. Malnutrition. Nervous.
18. Frequent bronchitis.
19. Frequent attacks of pneumonia.
20. Frequent bronchitis.
21. Malnutrition. Nervous.
22. Malnutrition.
23. Scarlet fever last spring. Frequent attacks of bronchitis.
24. Malnutrition. Advise removal of tonsils and adenoids.
25. Tonsils and adenoids in bad condition. Advise removal.

26. Malnutrition. Advise removal of tonsils and adenoids.
27. Malnutrition. Tuberculosis contact.
28. Malnutrition. Bad heart. Pneumonia three times.

Table I shows the effect on the weight of the pupils of the treatment given by the school. The record is only for those who were in the school for the entire school year 1923–24. One of the girls, No. 4, and two of the boys, Nos. 2 and 5, were overweight instead of underweight. It will be noted that twelve of the seventeen children

TABLE I

WEIGHT RECORD OF PUPILS IN ATTENDANCE FROM SEPTEMBER, 1923, TO MAY, 1924

	SEPTEMBER, 1923			MAY, 1924			NUMBER OF POUNDS GAINED
	Weight	Normal Weight	Number of Pounds Underweight	Weight	Normal Weight	Number of Pounds Underweight	
Girls:							
1	34¾	41	6¼	38¾	47	8¼	4
2	52¼	54	1¾	56½	62	5½	4¼
3	59¼	70	10¾	64¼	74	9¾	5
4	60	57	.....	64½	63	.....	4½
5	73½	87	13½	77¼	90	12¾	3¾
6	88¼	104	15¾	104½	106	1½	16¼
7	38¾	47	8¼	41¼	49	7¾	2½
8	51	64	13	57	68	11	6
Boys:							
1	56	68	12	64½	72	7½	8½
2	60¾	60	.....	68	62	.....	7¼
3	46¾	52	5¼	52½	57	4½	5¾
4	51	60	9	58½	60	1½	7½
5	65	61	.....	74½	69	.....	9½
6	72¾	74	1¼	78½	79	½	5¾
7	60¾	75	14¼	68½	82	13½	7¾
8	59¼	79	19¾	68¾	86	17¼	8½
9	67	82	15	71¾	86	14¼	4¾

were underweight 10 per cent or more in September, while in May only nine of the seventeen were underweight ten per cent or more. Of the girls, Nos. 1 and 2 were underweight more in May than they were in September, but all of the other children who were underweight in September were underweight less in May than they were in September.

Table II enables us to compare the difference between the normal weights for September and May with the difference between the

actual weights. No. 4 of the girls and Nos. 2 and 5 of the boys were overweight at the beginning of the year and also at the close of the year. Of those who were underweight in September, all except Nos. 1 and 2 of the girls actually gained more than the difference between their normal weights in September and May. At first thought, this does not seem to be much gain in weight, but when notice is taken of the fact that these were subnormal children to begin with and that in all probability little if any gain toward

TABLE II

DIFFERENCE BETWEEN NORMAL WEIGHT IN SEPTEMBER AND NORMAL WEIGHT IN MAY AS COMPARED WITH DIFFERENCE BETWEEN ACTUAL WEIGHTS

	Difference in Pounds between Normal Weights	Difference in Pounds between Actual Weights
Girls:		
1	6	4
2	8	4¼
3	4	5
4	6	4½
5	3	3¾
6	2	16¼
7	2	2½
8	4	6
Boys:		
1	4	8½
2	2	7¼
3	5	5¾
4	0	7½
5	8	9½
6	5	5¾
7	7	7¾
8	7	9½
9	4	4¾

normal weight would have been made in the regular schools, the increase seems much more significant.

From the standpoint of the effect on regularity of attendance a much better showing was made. In spite of their physical condition, most of the pupils attended regularly, and all were promoted at the end of the year.

Table III compares the number of days absent since the pupil entered the health school with the number of days absent for an equal number of days before entering. The records of all pupils

who had had a prolonged illness just before being admitted to the school are omitted from this table. The pupil who was absent twenty-two and one-half days was out because of a tonsil and adenoid operation. After entering this school, the pupils whose attendance records are shown were absent 181 days. The same pupils for a corresponding period before entering the school were absent 627 days.

TABLE III

RECORD OF ATTENDANCE

Pupil	Number of Days Absent before Entering	Number of Days Absent after Entering	Number of Days Compared
1.....	105	2	180
2.....	96	28	180
3.....	74	31	180
4.....	57	1½	180
5.....	43	33½	180
6.....	37½	6½	180
7.....	31	2	260
8.....	23½	4½	180
9.....	21	0	60
10.....	20½	2½	90
11.....	19½	4	180
12.....	19½	9	180
13.....	16	5	90
14.....	13	½	90
15.....	12	7½	260
16.....	11½	11	60
17.....	11	22½	260
18.....	5	1	180
19.....	5	4	150
20.....	4	4	90
21.....	1½	0	90
22.....	½	1	90
Total.....	627	181	.....

Parents and pupils alike are enthusiastic about the opportunities offered by this health school. Pupils are not compelled to leave their regular schools, and for some time, because of a misunderstanding of the purposes of the school, the attendance was small. At present indication it appears that the school will be operating up to its capacity for the year 1924–25.

CHILDREN'S THEMES AS A SOURCE OF SPELLING VOCABULARY

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Probably no subject of the elementary-school curriculum has had as much thorough scientific investigation devoted to it as has the subject of spelling. Such investigation, both intensive and extensive, has attempted, among other things, to solve problems concerned with the most fundamental concept in the teaching of spelling: the content of the course of study. The vast majority of the individual investigations which have been made for the purpose of determining spelling vocabulary have been based on the doctrine of social utility. The application of this doctrine to this particular problem means that the words to be taught in school shall be those words which are used in life outside the school. The analysis of adult activities shows that correspondence constitutes the most common and the most frequently occurring situation in which spelling ability is needed in life outside the school. A complete analysis would include both business and personal letters, and to these may be added such sources as telegrams, the minutes of different types of organizations, school excuses, etc. The work of Anderson, Ashbaugh, Ayres, Horn, Houser, and others who have applied the doctrine of social utility has resulted in the compilation of lists of words which are used in adult correspondence and other situations such as those mentioned. It is obvious, then, that if the doctrine of social utility is accepted and the proposition that adult correspondence furnishes the best source of spelling vocabulary is agreed upon, the words found by investigations based on these principles should constitute at least part of the content of the course of study in spelling.

Investigations concerned with spelling vocabulary have also been made in the field of children's themes. Such investigations have proceeded on the assumption that the words used by school

children in writing compositions should be included in the course of study. At least five such investigations have been made. Probably the most widely known is that made by W. F. Jones,[1] who reported an analysis of 75,000 themes containing 15,000,000 running words. Similar investigations have been made by W. F. Tidyman,[2] E. F. Brown,[3] H. J. Smith,[4] and Nicholas Bauer.[5] Just what contribution such investigations of children's themes have made in determining the content of the course of study in spelling remains to be seen.

It is the chief purpose of this article to report the results of an investigation of children's themes made by the writer during the winter of 1923–24. Certain preliminary investigations, made by Ernest Horn at the State University of Iowa, in the field of children's themes and also in the field of spoken vocabularies indicated clearly that there are a great many words in both the written and spoken vocabularies of children which are not included in any of the theme investigations reported. For this reason it seemed advisable to make a more detailed study of one special method of stimulating the vocabulary of children's written themes. The investigation sought, first, to determine how adequately certain previous theme investigations have really discovered the vocabulary which children use in writing compositions and, second, to determine whether or not the words reported by such previous investigations and the words found in this investigation are included in such standard lists as the Horn Composite List[6] and the Thorndike Word List.

As has been suggested, the investigation made by the writer differed from the previous investigations in that an attempt was

[1] W. Franklin Jones, *Concrete Investigation of the Material of English Spelling.* Vermilion, South Dakota: University of South Dakota, 1914. Pp. 32.

[2] W. F. Tidyman, *Survey of the Writing Vocabularies of Public School Children in Connecticut.* Teacher's Leaflet No. 15, 1921. Washington: Bureau of Education.

[3] Unpublished study, referred to in this article as the St. Louis study.

[4] Study reported in *The Child and His Spelling* (pp. 257–64) by W. A. Cook and M. V. O'Shea. Indianapolis, Indiana: Bobbs-Merrill, 1914.

[5] Nicholas Bauer, *The New Orleans Public School Spelling List.* New Orleans, Louisiana: H. F. Hansell & Bros., 1916.

[6] The Horn Composite List used in this investigation included the results of those studies made up to and including the year 1921. At the present time a much more extensive list has been completed by Ernest Horn at the State University of Iowa.

made to stimulate the pupil to write by preparing for his use a well-selected list of theme topics on subjects which are included in common and widely varied fields of human activity. It was thought that such practical theme topics as "How to Paint a Bird House," "How Our Mayor Is Elected," "How the Streets Are Cleaned," etc., would stimulate him to use a wider and more common vocabulary than would such topics as "How I Spent My Vacation" or "An Exciting Ride."

Although the methods used by certain previous investigators show considerable variation in detail, there appears a significant similarity among them in the fact that the spontaneous compositions of pupils were used as the source of data. The New Orleans, the St. Louis, and probably the Jones investigations are possible exceptions to this method. However, in the New Orleans investigation only ninety topics were assigned from which selection was made by the pupils. It is not possible for such a limited number of topics to include all of the common situations arising in the actual experiences of the majority of the pupils, even though the ninety topics deal with child life and activities. In the St. Louis investigation the teacher merely suggested topics to help the pupil make his choice. In the Jones investigation the pupils wrote daily themes, under regular school conditions, on any topic of interest to them. The report of the study does not state definitely whether topics were assigned or suggested by the teacher or chosen by the pupils individually. There is some indication of the assignment of topics in the statement made by the author that when the flow of new words had almost ceased new words were sought by varying the themes so as to reach into new and varied fields of experience. Such topics as "The Playhouse I Should Like," "What I Expect to Do When I Am a Man," and "How I Spent My Last Vacation," are reported as representative examples of the type of topics used.

As a basis for the material used in this investigation a list of 387 theme topics was constructed. It was the aim to include only those topics which deal with common human activities. The organization of the topics was determined by a study of the social analyses presented in Small's *General Sociology*,[1] Bobbitt's *How to*

[1] A. W. Small, *General Sociology*, chap. l. Chicago: University of Chicago Press, 1905.

Make a Curriculum,[1] Snedden's *Educational Sociology*,[2] and "The Chart of Civilization" from *A Mother's Letters to a Schoolmaster*.[3] Bobbitt's analysis was finally adopted as the basis for the organization of the theme topics. This analysis includes the following main divisions: communication, health, unspecialized practical labors, citizenship, social contacts and relationships, general mental efficiency, leisure occupations, and religious activities.

The list of 387 theme topics, although extensive, is by no means complete. A much larger number of topics would be found in a list which claimed to include all of the activities of the average person. However, the list indicates the type of topics which the writer believes may more nearly determine the child's actual writing vocabulary than have previous investigations. The following list of theme topics includes a sampling from each of the main divisions under which the 387 topics were organized:

I. Communication:
   1. How do you clean a fountain pen?
   2. How may ink marks be erased?
   3. How is paper made?
   4. Write a letter to a friend telling him or her what you did last Saturday.
   5. Tell how to read a map.
   6. What can one learn about a word in the dictionary?
   7. Tell how to send a telegram.
   8. Tell how to stand when speaking to an audience.

II. Health:
   1. What should one eat when in training for athletics?
   2. Why should we not eat when we are tired?
   3. How can hard water be softened?
   4. What is a good running game? How is it played?
   5. How should a bedroom be ventilated?
   6. How should we dispose of garbage?
   7. How should one dress for a hike?
   8. How can you relieve sore feet after a long hike?

III. Unspecialized practical labors:
   1. How do you sharpen your skates?
   2. How could you make a trapeze?

[1] Franklin Bobbitt, *How to Make a Curriculum*, chap. ii. Boston: Houghton Mifflin Co., 1924.

[2] David Samuel Snedden, *Educational Sociology*, chap. xx. New York: Century Co., 1922.

[3] *A Mother's Letters to a Schoolmaster*, p. 85. New York: Alfred A. Knopf, 1923.

3. How do you build a camp fire?
4. How do you prepare the ground for a vegetable garden?
5. How is seed corn tested?
6. Tell how to care for a bird.
7. Tell how to wash a car.
8. Tell how to clean white shoes.

IV. Citizenship:
1. What are some of the health laws which your town has?
2. How should one act in a library?
3. What are the powers and duties of the police?
4. How do you use the card index in the library?
5. How should you act when the fire alarm rings at school?

V. Social contacts and relationships:
1. How should a formal invitation be answered?
2. What are some foods which may be eaten with the fingers?
3. How should a napkin be held?
4. What are some table conversation rules?
5. How should one cross the street when walking?
6. Why should one be punctual?

VI. General mental efficiency:
1. What are some of the things of interest in your state?
2. Tell about an unusual plant which you have seen.
3. Why do you think grammar is an important study?
4. Why do you believe the earth is round?
5. How did we get Thanksgiving Day?

VII. Leisure occupations:
1. How do you play your favorite indoor game?
2. What is a good puzzle, and how is it solved?
3. How can you make a sled?
4. Tell about a poem which you think is worth memorizing.
5. Tell some interesting things about the caterpillar.

VIII. Religious activities:
1. What is the story of Joseph being sold into Egypt?
2. What is the story of Noah and the Ark?
3. Tell the story of David and Goliath.
4. What do you do at Sunday school?
5. Tell a story about Moses.

For the purpose of this investigation a mere sampling of theme topics was used. One hundred and eighty topics were taken from the total list of 387 in such a manner that one group of topics was obtained from each main division. The topics used include 30 on communication, 28 on health, 21 on unspecialized practical labors,

16 on citizenship, 20 on social contacts and relationships, 16 on general mental efficiency, 41 on leisure occupations, and 8 on religious activities. The number of written themes totaled 180, not more than one theme being written on a topic. Only sixth-grade pupils were used. In scoring the themes, every word found was tabulated and a record kept of the frequency of its occurrence. Detailed instructions were sent to the teachers who co-operated in the work. These materials are recorded in the writer's Master's thesis on file in the College of Education Library at the State University of Iowa.

The scoring of the 180 themes used in this investigation resulted in a list of 18,958 running words and 2,329 different words.

As previously stated, one of the purposes of the investigation was to determine how adequately certain previous theme investigations have discovered the vocabulary which children use in writing compositions. So far as this investigation is concerned, there are two means of making this measurement: the first consists of a comparison of the word lists of the different investigations, and the second consists of a comparison of these lists with the word list of the present investigation.

When the first comparison is made, less consistency is found among the different word lists than might be expected from the similarity of the methods used. The comparison shows that there are only 1,475 words on which four of the five previous investigations agree; in other words, *there is lack of agreement among the previous investigations as to just what words constitute the written theme vocabulary of school children.* This condition is all the more striking when one remembers Jones's assumption that he had "pumped the word-wells dry" in his analysis of 75,000 themes and tabulation of 15,000,000 running words. It seems to the writer that if the words which children use in writing themes are to constitute part of the spelling vocabulary, such words should be those most frequently used under such conditions. If this proposition is accepted, one must conclude that only such a theme list as these 1,475 words compose includes those words which the teacher is justified in teaching.

The second means of ascertaining how adequately previous theme investigations have determined a reliable theme vocabulary

is by a comparison of the word lists of the different investigations with the word list of the present investigation. Table I shows the results of such a comparison. It is evident from this table that this investigation, although it represents a mere sampling of children's themes, lists many words which were not reported by the previous investigations. It is also evident that this investigation lists nearly 600 words which no previous investigation has reported. This points to the fact that *no previous investigation, nor a compilation of all of them, has succeeded in securing even a reasonably complete list of the words which children use in writing themes.* Even the comparison with the Jones list, based on an analysis of 75,000 themes, showed that this investigation obtained 893 words which Jones did not

TABLE I

Number of words found in this investigation which were not reported in the Jones investigation	893
Number of words found in this investigation which were not reported in the Smith investigation	1,623
Number of words found in this investigation which were not reported in the New Orleans investigation	1,154
Number of words found in this investigation which were not reported in the St. Louis investigation	1,174
Number of words found in this investigation which were not reported in the Tidyman investigation	1,099
Number of words found in this investigation which were not reported in any previous investigation	587

report at all. Hence, it is perfectly clear that Jones did not "pump the word-wells dry," as he assumed.

It seems certain that, since a large amount of variability was exposed by a comparison of the word lists of previous investigations with the word list of this investigation, a more extensive investigation of this type would secure a much larger list of words which have not been previously reported. Unquestionably, a more thorough investigation of children's written vocabularies should be made. Even if no new words are found to occur with high frequency in such an investigation, the study would be worth while as one method of determining the grading of such lists as are obtained from the analysis of adult writing needs.

It will be remembered that the second purpose of the present investigation was to determine whether or not the words reported

in the five previous investigations and those reported in this investigation are included in such standard lists as the Horn Composite List and the Thorndike Word List.

The writer has heard the argument that lists of words obtained by the analysis of correspondence, telegrams, minutes, etc., are not sufficient and that lists obtained by the analysis of children's themes should be added to the correspondence lists before we can hope to have a reasonably complete spelling vocabulary. Inasmuch as the Horn Composite List and the Thorndike Word List are very frequently used as sources of spelling vocabulary, it is important to determine the relation existing between these two standard lists and theme lists. If the two standard lists contain the words which have been found in children's themes, there is no need to set up a new spelling vocabulary based on such themes. If they do not

TABLE II

Number of words found in the theme list which are not found in the Horn list	52
Number of words found in the theme list which are not found in the Thorndike list	38
Number of words found in the theme list which are not found in either the Horn list or the Thorndike list	6
Number of words found in either the Horn list or the Thorndike list which are not found in the theme list	11,970

contain the words found in children's themes, we may logically consider the addition of such words to spelling vocabularies.

Inasmuch as the Horn Composite List and the Thorndike Word List are limited to words found several times, it would seem correspondingly fair, in making the comparison between the two standard lists and the theme lists, to limit in a similar way the words derived from theme studies. If a comparison is made between the two standard lists and the list of 1,475 words, which is composed of those words which are common to four of the five previous theme investigations, the results are those shown in Table II. This table certainly shows that the two standard lists contain practically all of the words which are common to four of the five previous theme investigations. There are only six words among the 1,475 which are not included in one of the two standard lists. There are only 52 words which are not found in the Horn list, and only 38 are not found

in the Thorndike list. Evidently, *the contribution of previous theme investigations in the way of adding new words to the spelling vocabulary, as determined by the Horn Composite List and the Thorndike Word List, has been quite negligible.*

Table III shows the results of a comparison of the word list of this investigation with the Horn and Thorndike lists. It is perfectly clear from this table that the present investigation obtained a large number of words which do not appear in the two standard lists. This is to be expected, inasmuch as children probably use some words in theme-writing which authors of children's literature

TABLE III

Number of words found in this investigation which are not found in the Horn list	368
Number of words found in this investigation which are not found in the Thorndike list	758
Number of words found in this investigation which are not found in either the Horn list or the Thorndike list	323

TABLE IV

Number of words found in this investigation which were reported in the Jones investigation	1,536
Number of words found in this investigation which were reported in the Smith investigation	706
Number of words found in this investigation which were reported in the New Orleans investigation	1,175
Number of words found in this investigation which were reported in the St. Louis investigation	1,155
Number of words found in this investigation which were reported in the Tidyman investigation	1,230
Number of words found in this investigation which were reported in the Horn Composite List	1,961

do not use or which are not used in adult correspondence. It should be borne in mind that this investigation consisted of a mere sampling of children's themes and that it is just one investigation. Hence one is not justified in adding to our present spelling vocabulary the 323 words not found in either the Horn list or the Thorndike list.

There remains one significant comparison to be made. Table IV shows the number of the 2,329 words found in this investigation which were reported in previous theme investigations and in the Horn Composite List. The results of this comparison show that

the Horn Composite List, a list based on an analysis of adult writing needs, includes more of the words found in this investigation, an investigation concerned with a special method of stimulating the vocabularies of children's written themes, than does any one of the previous theme investigations.

CONCLUSIONS

1. Inasmuch as the word lists of the five previous theme investigations show considerable disagreement and inasmuch as they are very incomplete, it may be concluded that these theme investigations have not adequately determined the vocabulary which children use in theme-writing.

2. Inasmuch as the Horn Composite List and the Thorndike Word List contain practically all of the 1,475 words common to four of the five previous theme investigations, the contribution of theme investigations to spelling vocabulary is negligible.

3. The method used in this investigation shows promise of obtaining a much more extensive vocabulary than has been previously reported.

4. No single theme investigation is thorough and complete.

5. The Horn Composite List, a list based on an analysis of adult writing needs, includes more words found in this investigation than does any one of the previous theme investigations.

HEIGHT AS A BASIS FOR COMPETITIVE ATHLETICS IN ELEMENTARY AND JUNIOR HIGH SCHOOLS

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The present method of dividing boys into weight classes only for the purpose of conducting athletic contests in elementary and junior high schools is, according to the writer, wrong and unfair to the pupils. Another plan has therefore been devised which will (1) provide new standards by which certain events may be judged, (2) find the minimum standards for a boy, (3) provide for a series of increasingly difficult tests, (4) encourage and interest more boys in competitive events, and (5) prevent undeveloped but ambitious boys from trying to accomplish uniform standards set by larger boys and thus save them from possible injury.

For several years the writer has frequently urged boys in the grades up to and including the ninth to enter the athletic events ordinarily included in a track meet. Usually the same reply is given: "There is no use of my jumping against that large boy." Investigations show that this large boy has the advantage, and the smaller boys instinctively know their handicap. This is unfair to the middle and lower tertiles of any weight group, since the larger boys are found in the upper tertile. Every boy must feel that he has a fair chance to compete with every other boy. Physical education is concerned with this problem. It must attract all pupils, and it must reach every pupil to encourage him to do his best. It should also seek to prevent a boy from doing more than he is normally able to do. The fact that the small boy is expected to compete with the tall boy violates the purpose that physical education should strive to foster.

A record sheet was prepared and a copy sent to each physical director in the city of Des Moines. This sheet provided for the records in inches made by various boys in the running high jump, the standing broad jump, the hop-step-jump, and the running

broad jump. There were also blanks to be filled in for the age and weight of each boy. The physical directors secured the necessary records and sent the sheets to the writer.

All of the boys were grouped according to weight. In the grades there were three classes: all boys weighing less than seventy-five pounds made up the first class; all boys weighing from seventy-five to ninety pounds made up the second class; all boys weighing more than ninety pounds made up the third class. These weight classes were arranged so that the shortest boy was listed first and the tallest boy last.

TABLE I*

RECORDS OF ELEMENTARY-SCHOOL BOYS

	Running High Jump	Standing Broad Jump	Hop-Step-Jump	Running Broad Jump
	585 Boys Weighing Less Than 75 Pounds			
Lower tertile	6,702	11,657	37,072	19,521
Middle tertile	6,955	12,198	39,555	20,019
Upper tertile	7,159	12,565	41,820	21,092
	564 Boys Weighing from 75 to 90 Pounds			
Lower tertile	6,870	12,122	40,484	19,252
Middle tertile	7,064	12,440	44,188	20,080
Upper tertile	7,483	13,866	43,635	22,727
	426 Boys Weighing More Than 90 Pounds			
Lower tertile	5,480	9,013	31,286	14,261
Middle tertile	5,629	9,699	25,773	21,539
Upper tertile	6,340	10,205	34,222	16,829

* The figures in this table are the total number of inches for the respective tertiles.

A summary of the data for the elementary-school boys is given in Table I. This table shows clearly that the high jump increases as the height of the boy increases. The same fact is seen in the other events. There are three cases where the increase is not regular, two of which occur in the hop-step-jump event. This is to be expected in the hop-step-jump. In fact, it seems exceptional that any of the records in this event are at all regular. No practice was allowed for these records, and this event was never included in the usual grade track meets. If one has ever seen a

boy try this event for the first time, one realizes that the average boy cannot make even a fair showing without practice.

The third irregularity, which occurs in the case of the running-broad-jump records for the boys weighing more than ninety pounds, can be explained only by the fact that the boys in some of the schools had practiced this event.

It is to be noted that in the three irregular cases the upper tertile is larger in each case than the lower tertile.

The figures for the junior high school boys show the same trend as the figures for the elementary-school boys. In the case of the boys weighing less than ninety pounds, there is a gradual increase in the height of the jump as the height of the boy increases. It may be said that this is to be expected. If all of these boys are to compete as a class, however, those boys in the lower tertile have no chance to win. The chief point to be made is that the boys in the lower tertile must have a chance. The injustice of our present method is clearly shown in the figures. The same situation is found in the case of the boys weighing from 90 to 110 pounds. There are two exceptions in the case of the boys weighing more than 110 pounds. These boys are the largest boys and are just about to enter the senior group. There is not the uniformity among the older boys that exists among the younger boys.

Graphs were made of the records of the boys weighing less than ninety pounds on the basis of the boys' ages, but no uniformity was shown. This eliminates age as a basis.

CONCLUSIONS

In any given weight grouping the boys who are in the upper tertile will set the standards for the lower two-thirds, and they will naturally set it so high that the lower two-thirds cannot hope to win even if they can be persuaded to take part. Hence, a weight grouping alone results in a contest among those few boys who happen to be in the upper third of any group. This is surely an injustice to the boys of the lower two-thirds.

While the present study was not carried into the senior high school, it is quite likely that the same situation does not exist in the case of the older boys since many of them are full grown. The

break in the records of the larger boys (over 110 pounds) would tend to indicate this.

The following plan of conducting athletic events has proved very satisfactory. It opens the way for more boys to enter, compete, and win. It is more democratic and in keeping with the ideals of all athletics in our public schools.

1. In the running high jump any boy who jumps sixteen inches less than his height has jumped the minimum and passed his first test. Every inch added to this test constitutes an additional test. It is easily seen that any boy who is fifty-four inches high and jumps forty-six inches, for instance—eight inches less than his height and therefore his ninth test—could be beaten by any boy fifty inches high who jumps forty-five inches—five inches less than his height or his twelfth test—even though the second boy does not jump as high as the first boy. The writer contends that any boy who jumps his height is an excellent jumper. It seems best to keep some divisions of weight classes also in order to enlarge the number of winners and not to discourage the tallest boys.

2. In the standing broad jump ten inches more than a boy's height gives him his minimum jump or first test. Every inch more that he jumps gives him an additional test. Here again we see that the small boy has a chance to win against the large boy.

3. In the hop-step-jump any boy who makes a record of 3.35 times his height passes his first test. His second test is found by multiplying his height by 3.40; his third test by multiplying his height by 3.45, etc., adding .05 for each additional test. This method may be reversed. A boy makes a jump and measures it. This measurement in inches is divided by the boy's height, and the number of the test is found by counting up from 3.35 by intervals of .05.

4. In the running broad jump any boy who jumps forty inches more than his height passes his first test. Additional tests may be secured by adding one inch for each test.

This plan offers the boy a chance to watch his own progress, encourages and interests more pupils, and makes it possible for a boy to compete on a level commensurate with his ability. Furthermore, there is no reason for him to try to do the impossible.

SOME NEXT STEPS IN ESTABLISHING STANDARDS FOR TEACHERS' COLLEGES[1]

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The problem of preparing teachers is the most important educational problem with which this nation has to deal at the present time. The effectiveness of the public school system of the United States depends to a very large degree on the adequate preparation of its teachers. This is a problem which the state teachers' colleges of America must solve as their contribution to the satisfactory promotion of public education. The nation needs a teacher-preparation program which will be a permanent solution of the problem and which will result in an adequate supply of properly trained teachers in every state. The public schools of America can carry on their work with the degree of effectiveness to which the American children are entitled only when the teachers' colleges are able to place an adequately trained teacher in every schoolroom in the country. The problem is an important one, and its solution is fundamental to the success of democracy. The time has come when the American teachers' colleges, working together through the American Association of Teachers Colleges, must formulate a program which will be nation-wide in scope. They must then secure the adoption of this program in every state. Without strong and effective leadership from this organization, the several states working individually will not give to this question the consideration which will result in the definite, forward-looking action that is required.

The state normal schools of yesterday are now in the process of developing into degree-granting institutions on the college level; many have already attained the degree-granting privilege and have assumed teachers'-college status. The present, therefore,

[1] Address delivered before the American Association of Teachers Colleges in Chicago, February 22, 1924.

is an important and critical stage in the history of these institutions. Certain problems and issues are fundamental at this time and deserve the most careful consideration by this association.

There are certain standards which must prevail among teachers' colleges before these schools are entitled to full recognition as institutions of collegiate grade. These standards deal with the requirements for admission, the organization and content of the curriculums, the quality of instruction, the requirements for graduation, the training of the faculty members, the size of the instructional and supervisory staffs, and many similar problems. The trend of development of the American teachers' college for a long period in the future will depend largely on the attitude which this association takes toward these questions during the next few years.

This report deals with only one aspect of these problems. The larger question, of which the particular problem of this paper is a part, may be stated as follows: What specific standards and requirements should be the basis of the organization of an American teachers' college which expects to represent the highest type of professional education in the field of teacher preparation? It is the purpose of this report to isolate one aspect of this problem, to analyze it on the basis of a study of the standards and practices which now exist among teachers' colleges and among privately endowed colleges for general education, and to draw conclusions which are justified by the facts. This particular problem may be expressed in the form of a question: What instructional and supervisory staffs are necessary for a teachers' college with any given enrolment in order that the highest collegiate standards may be maintained? What standards shall determine what constitutes an adequate faculty? It is clear that if teachers' colleges are to maintain instruction and supervision which are collegiate in type, there needs to be a sound basis established in the form of standards by which to determine what faculty is adequate, in point of number, to carry on the work of such an institution. There is now no general agreement in practice in these matters. Teachers' colleges are as yet unstandardized institutions.

The standards of a good teachers' college should be equally as high as those of the undergraduate departments of the best

colleges, universities, and professional schools, such as schools of medicine, engineering, and law. It should be just as easy, but no easier, for a student to gain admission to a state teachers' college as to the state university. The course of study in the teachers' college should be just as well organized as the courses of study in the state university. The teachers' college should have just as exacting requirements of accomplishment and just as excellent instruction as the various undergraduate professional schools of the state university. It should be just as difficult to secure the diploma or degree of the teachers' college as it is to secure the degree of the law school of the university. The degree of the state teachers' college should entitle the holder to full graduate standing in the best schools of education in the country.

It is safe to say that these standards do not universally prevail among teachers' colleges. There is general agreement, however, that such standards ought to exist among these institutions. Therefore, one of the important problems confronting this association at the present time is the formulation and adoption of a program of higher standards which all teachers' colleges should adopt and maintain.

As a basis for this report, a questionnaire was sent to a selected list of teachers' colleges and another to a group of privately endowed colleges. The list of teachers' colleges included at least one from each state, but all did not report. A total of seventy-five teachers' colleges reported. Thirty of the forty-eight states are represented by at least one teachers' college and some states by several. This is such a typical selection that if every teachers' college in the country had reported, the results would not have been materially altered. Conclusions drawn from the data secured from this group of institutions are probably true of teachers' colleges taken as a class. The effort to get reports from privately endowed colleges was less successful, but replies were eventually secured from fifty. These colleges probably represent the best American privately endowed colleges. It is perhaps true that the standards of these institutions may be taken as representing desirable collegiate standards as they prevail today in this country. They are possibly

not as high as those of our best state universities or our larger privately endowed universities.

This report deals with five aspects of the problem of the adequacy of the staff, which will now be discussed in the light of the data secured.

1. Is the American teachers' college as well staffed as the best colleges of the privately endowed type? An examination of the ratio of students to faculty members in teachers' colleges and privately endowed colleges brings out some interesting facts and furnishes an answer to this question. The facts are set forth in Table I.

It appears that the median ratio of students to faculty members is considerably greater in teachers' colleges than in privately endowed colleges. The median privately endowed college has 13.8 students to each member of the faculty and the median teachers' college has 22.2 students. Thus, the student-faculty ratio in the teachers' colleges is greatly in excess of the student-faculty ratio in the privately endowed colleges. The range in the number of students to each member of the faculty reaches a much higher figure among the teachers' colleges than among the privately endowed colleges. No privately endowed college among those represented in this investigation has a student-faculty ratio higher than 16.4 students to each member of the faculty, while among the teachers' colleges the ratio goes as high as 38.1 students to each member of the faculty. One-fourth of the teachers' colleges have a student-faculty ratio ranging from 26 to 1 to 38.1 to 1. The corresponding upper one-fourth of the privately endowed colleges, however, has a range extending from 15.3 to 1 to 16.4 to 1. The data on which Table I is based revealed the fact that 92 per cent of the teachers' colleges have a student-faculty ratio higher than the highest student-faculty ratio found in the privately endowed colleges. One-eighth of the teachers' colleges have a ratio nearly twice as great as the highest ratio found in the privately endowed colleges.

What has been said concerning student-faculty ratio refers entirely to the college department. However, a portion of the load represented by the programs of students in the college department

is carried by the staff of the training school. In the typical teachers' college ten credit hours are allotted to practice-teaching, which is usually handled entirely by the staff of the training school. But the amount of credit required for a year's work in a teachers' college is considerably in excess of that required in the typical liberal arts college. The typical teachers' college requires a student program of sixteen, eighteen, or even a larger number of credit hours a week. Most colleges of the general type require fifteen.

On the whole, then, the fact that the faculty of the college department is relieved of a small part of the load by the training-school staff, is probably offset by the fact that heavier loads in general are required by the curriculums of many teachers' colleges.

2. How do classes compare in size in teachers' colleges and in privately endowed colleges? Each institution was requested to

TABLE I

NUMBER OF STUDENTS TO EACH MEMBER OF THE FACULTY IN FIFTY PRIVATELY ENDOWED COLLEGES AND SEVENTY-FIVE TEACHERS' COLLEGES

	Lowest	Lower Quartile	Median	Upper Quartile	Highest
Private colleges.....	8.3	11.7	13.8	15.3	16.4
Teachers' colleges.....	10.7	18.3	22.2	26.0	38.1

give the closest possible estimate of the prevailing number of students in the classes in the several lines of work, based on actual practice. This, of course, gives less accurate data than would have been secured had the actual average or median size of class been determined. The amount of labor involved, however, in getting the latter figure in each line of work would have been so great that fewer replies would have been secured. It is believed that the data as they stand have considerable value. The facts are set forth in Table II.

The teachers' colleges appear to have larger classes in every line of work. In the general classroom subjects the median class is somewhat larger in the teachers' colleges than in the privately endowed colleges, but the greatest difference occurs in the range. The range is from 18 to 60 students in the teachers' colleges and

from 10 to 30 students in the privately endowed colleges. In 85.7 per cent of the teachers' colleges the classes in both English composition and the classroom subjects equal or exceed in size the median class of the privately endowed colleges. In 79.6 per cent of the teachers' colleges the classes in the classroom subjects equal or exceed in size the largest class in the privately endowed colleges. The largest class in English composition in the privately endowed colleges includes 34 students; in the teachers' colleges, 56 students. In 61.2 per cent of the teachers' colleges the classes

TABLE II

NUMBER OF STUDENTS PER CLASS IN FIFTY PRIVATELY ENDOWED COLLEGES AND SEVENTY-FIVE TEACHERS' COLLEGES

	Lowest	Lower Quartile	Median	Upper Quartile	Highest
English composition:					
Private colleges	15	22	25.0	28.0	34
Teachers' colleges	15	25	29.0	34.5	56
Classroom subjects:					
Private colleges	10	22	25.0	25.0	30
Teachers' colleges	18	30	31.0	38.0	60
Laboratory work:					
Private colleges	7	18	20.5	25.0	60
Teachers' colleges	12	20	22.0	30.0	40
Shopwork:					
Private colleges	5	10	12.0	16.5	25
Teachers' colleges	7	15	18.0	24.0	45
Physical education:					
Private colleges	20	26	30.0	42.5	90
Teachers' colleges	20	35	40.0	46.0	100

in English composition equal or exceed in size the upper quartile of the privately endowed colleges.

3. How do teachers' colleges compare with privately endowed colleges in the matter of the teaching load in terms of the number of classes a week? The data on this point are shown in Table III. The median number of classes assigned to a teacher is higher in all lines of work in the teachers' colleges than in the privately endowed colleges, but it is in the upper ranges of the distribution in which the greatest difference occurs. There are not nearly as great extremes in the privately endowed colleges as in the teachers' colleges. In English composition, for example, the largest number of classes a week for one teacher in the privately

endowed colleges is 16, but in the teachers' colleges a single teacher has as many as 30 classes a week. About the same situation is found in the general classroom subjects, the largest number of classes being 16 in the privately endowed colleges and 26 in the teachers' colleges. There is a large group of teachers' colleges in which the number of classes is considerably in excess of what is found in the privately endowed colleges. In 81.3 per cent of the teachers' colleges the number of classes in the classroom subjects is as great as or greater than the highest number of classes in the privately endowed colleges; in 97.3 per cent of the teachers' colleges the number

TABLE III

TEACHING LOAD EXPRESSED IN NUMBER OF HOURS A WEEK IN FIFTY PRIVATELY ENDOWED COLLEGES AND SEVENTY-FIVE TEACHERS' COLLEGES

	Lowest	Lower Quartile	Median	Upper Quartile	Highest
English composition:					
Private colleges	4	9.5	12.0	15.0	16
Teachers' colleges	8	15.0	16.0	19.5	30
Classroom subjects:					
Private colleges	9	12.5	14.0	15.0	16
Teachers' colleges	12	16.0	17.0	20.0	26
Laboratory work:					
Private colleges	6	15.0	19.0	24.5	30
Teachers' colleges	12	19.0	24.0	29.0	32
Shopwork:					
Private colleges	10	15.5	22.0	24.5	33
Teachers' colleges	15	19.0	24.0	30.0	32
Physical education:					
Private colleges	8	12.0	17.5	21.0	40
Teachers' colleges	10	16.0	20.0	22.0	43

of classes in the classroom subjects equals or exceeds the median number of classes in the privately endowed colleges.

4. What ratio of pupils to practice teachers is found in the training schools of the teachers' colleges? Table IV shows the present practice in this matter. Some teachers' colleges conduct their practice-teaching exclusively in a campus training school or in city schools so closely connected with the college as to constitute an equivalent situation; others, in addition to a campus training school, make use of city schools not under the direct control of the college; a few use city schools only. It is interesting to

note that in 58 per cent of the teachers' colleges only the campus training school is used and in 38 per cent both a campus training school and city schools are used. Colleges using city schools exclusively comprise 4 per cent of the total number.

Each teachers' college was asked to indicate the number of pupils in its training school, both in the campus training school and in the city schools, and also to report the number of practice teachers in terms of a certain number, each practicing one hour a day for one year.

The lowest ratio of pupils to practice teachers found in any college was .6 to 1. The highest ratio in the lowest one-fourth of the distribution was 1.7 pupils to one practice teacher. The median teachers' college has 2.9 pupils to one practice teacher, while the upper quartile reaches a ratio of only 4.8 to 1. In the highest

TABLE IV

NUMBER OF PUPILS IN THE TRAINING SCHOOL TO ONE PRACTICE TEACHER IN SEVENTY-FIVE TEACHERS' COLLEGES

	Lowest	Lower Quartile	Median	Upper Quartile	Highest
Combined campus and city training schools	.6	1.7	2.9	4.8	25.8
Campus training schools	.5	1.3	2.3	4.1	11.6
City schools	1.4	3.1	5.3	19.7	49.5

one-eighth of the distribution the number of pupils to one practice teacher ranges from 7.3 to 25.8.

5. What number of practice teachers does a supervisor or critic teacher supervise? It is probably more desirable for a teachers' college to have an adequate supervisory staff than any other department of the college. Everyone will agree that practice-teaching under competent supervision is the most important single aspect of the training of a teacher. It is desirable to set up some definite standard by which a teachers' college may determine what staff, in point of number, is required for adequate supervision.

An attempt was made to determine the current practice in this particular, but it was very difficult to devise a questionnaire which would cover the diverse situations which prevail in teachers'

colleges. It means little to ask how many practice teachers are assigned to one supervising critic, for it makes a great difference how much practice-teaching the student-teacher does. A practice teacher who teaches 20 minutes a day for 12 weeks constitutes a very different supervisory load from a practice teacher who teaches one hour a day for 36 weeks. Therefore, some convenient unit had to be selected. It was decided to adopt a unit which consists of one practice teacher teaching one hour a day for one year, that is, one practice teacher teaching 180 hours. Different numbers of practice teachers were expressed in terms of this unit. For example, 50 practice teachers each teaching 30 minutes a day for 12 weeks is the equivalent of 8.3 practice teachers each teaching one hour a day for one year. Similarly, 100 practice teachers each teaching three hours a day for 18 weeks is the equivalent of 150 practice teachers each teaching one hour a day for one year. The fundamental question then becomes, What number of practice teachers, each teaching one hour a day for one year, is assigned to one critic teacher or supervisor?

There are different conditions under which critic teachers carry on supervision. Three clear-cut cases appear to exist: (1) A critic teacher who has charge of a grade of standard size and supervises in addition all practice-teaching in both general and special subjects. (2) A critic teacher who has charge of a grade of standard size and supervises practice-teaching in the general subjects, being relieved of the supervision of practice-teaching in the special subjects by special supervisors of these subjects. (3) A supervisor who does not have charge of a grade and does supervision only but is relieved of the supervision of the special subjects.

Table V sets forth the facts. When a critic teacher has charge of a grade and is also responsible for the supervision of practice-teaching in both general and special subjects, she is assigned a median of eight practice teachers, each teaching one hour a day for one year. There are, however, extreme variations from this median in both directions. There are teachers' colleges which assign as few as 2, 3, and 4 practice teachers to such a critic. On the other hand, there are other teachers' colleges which assign as many as 15, 17, 20, and 24 practice teachers. In the case of a

critic teacher who has charge of a grade and supervises practice-teaching in the general subjects but is relieved of the supervision of practice-teaching in the special subjects, a larger number of practice teachers is assigned, but in this case the variation is even more extreme. One-fourth of the teachers' colleges assign from 17 to 45 practice teachers to such a critic; on the other hand, one-fourth assign only from 3 to 8. In the case of a supervisor who does supervision only and is relieved of the special subjects, a median of 16 practice teachers is assigned, but here the variation is even greater than in the other two cases. One-fourth of the

TABLE V

NUMBER OF PRACTICE TEACHERS ASSIGNED TO ONE CRITIC TEACHER OR SUPERVISOR IN SEVENTY-FIVE TEACHERS' COLLEGES

	Lowest	Lower Quartile	Median	Upper Quartile	Highest
Critics who have charge of a grade and supervise practice-teaching in both general and special subjects	2	4	8	15	24
Critics who have charge of a grade and supervise practice-teaching in the general subjects, being relieved of the supervision of practice-teaching in the special subjects	3	8	12	17	45
Supervisors who do not have charge of a grade, do supervision only, and are relieved of the supervision of the special subjects	8	11	16	24	80

teachers' colleges assign to such a supervisor from 24 to 80 practice teachers. Such numbers as 30 and 60 are common.

The general situation with reference to an adequate staff in a teachers' college has been set forth from five different points of view. It remains to consider the significance of these facts and to determine what action is desirable. It is clear that the teachers' colleges are not as well staffed today as the best colleges of the privately endowed type. In fact, the privately endowed colleges do not fall far short of being twice as well staffed, so far as the ratio of students to faculty members is concerned. There is a marked variability among the teachers' colleges which does not exist among the privately endowed colleges. This indicates that the teachers' colleges are less well standardized. Classes are larger in the

teachers' colleges, and their size in a large percentage of the teachers' colleges reaches an extreme limit which goes far beyond what is found in the privately endowed colleges. Coupled with this is the fact that in the teachers' colleges the members of the instructional staff teach a somewhat larger number of classes a week. In view of the facts set forth, if the privately endowed colleges furnish a proper standard, it is undeniably true that in the teachers' colleges the teaching load is excessive. It is necessary, however, to be very cautious in making statements on this point, for there is as yet no valid scientific evidence to indicate the best size of college class for instructional purposes. Nowhere, however, among other professional schools, good colleges, state universities, or the larger endowed universities does one find generally prevalent as large teaching loads as are now found in the teachers' colleges.

With reference to the supervisory load in the training school, there is no experience with which to make comparisons, for the teachers' college is a unique institution. It is necessary, then, to analyze the situation and draw conclusions which seem to be justified on the basis of the facts. It appears to the author of this report that the ratio of pupils to practice teachers, as now found in training schools, falls far short of what is desirable in at least one-half of the teachers' colleges and is so low in one-fourth of them as to raise a question as to the possibility of giving effective practice. It is generally accepted that a ratio of four pupils to one practice teacher is the minimum basis on which practice work can be efficiently conducted. Yet 66.7 per cent of the teachers' colleges fall below this ratio, and 28.3 per cent have less than one-half of this ratio.

In the matter of the number of practice teachers who can be supervised effectively by one critic teacher, it has been stated that a critic teacher cannot supervise effectively more than eight practice teachers at one time. It has also been affirmed that one critic teacher can supervise in a year twelve practice teachers, each doing 100 hours of teaching. These statements have been more or less generally accepted in recent years as guiding principles in organizing practice-teaching.

Undoubtedly, the large number of practice teachers assigned to one critic teacher by many teachers' colleges is cause for consider-

able misgiving. It is doubtful whether a critic teacher who has charge of a grade can supervise properly the number of practice teachers which are assigned in one-fourth of the teachers' colleges. There is no doubt that in this group of teachers' colleges the possibility of successful supervision of practice-teaching is precluded by the excessive number of practice teachers.

It is well to ask at this point, What are the proper and necessary conditions for the conduct of practice-teaching if the highest standards of professional education are to be maintained? It is now generally assumed that 180 hours of practice-teaching should be required for graduation from a teachers' college. This is the equivalent of teaching one hour a day for one year. It is also granted that some part of the teaching of the children in a training school should be done by critic teachers. It is held to be reasonable by the author of this report to require, in the interests of the children, that two-fifths of the teaching in the training department shall be done by critic teachers. Then, if the school is in session five hours a day, any group of children will afford practice for three student teachers each day throughout the year. If a grade of from thirty to forty children is divided into two groups for practice purposes, it will provide practice for six practice teachers each year. If this standard for amount of practice is maintained, any teachers' college will need for its supervisory staff one critic teacher accompanied by a group of from thirty to forty children for every six practice teachers. In other words, the ratio of critic teachers to practice teachers would have to be 1 to 6 and the ratio of practice teachers to children 1 to 5 or 7. This standard far exceeds the practice of many teachers' colleges, but it is believed to be a standard which efficient teacher-training demands.

The teachers' college is still in the making. It has but recently emerged from a secondary school, and naturally it has not yet divested itself of all of its secondary-school characteristics. Some of its standards and requirements are more secondary than genuinely collegiate in nature. The trend of its development in many particulars is yet to be determined. Constructive self-criticism and self-examination, then, are profitable and wholesome. It is eminently desirable that this association should know from time to time

not only the progress that has been made but also the faults that exist and the goals that are yet unattained.

The state normal schools of the country will not arrive at a genuine teachers'-college status unless they know what that status is and what the immediate route is by which it may be reached. They will never attain this objective by individual, haphazard effort. What is most needed at the present moment is a goal which is considerably in advance of present practices, the attainment of which by an institution will represent full teachers'-college status—a status as high as that of other institutions which represent in their respective fields the highest standards of professional education, such as schools of medicine, engineering, and law. This goal should be embodied in a set of carefully formulated standards for the guidance of teachers' colleges in their further development.

The next step in this discussion, obviously, is to present such a set of standards in connection with the particular problem with which this report deals, namely, the question of an adequate staff in point of numbers. The following standards are recommended to the association by the Committee on Standards. They are intended to represent standards which all teachers' colleges should eventually attain.

1. The maintenance of a teaching force which is adequate to carry on the work of a teachers' college with high collegiate standards requires that in the college department there shall be a ratio of students to faculty which does not exceed fifteen students to one member of the faculty.

2. The high grade of instructional service expected of the faculty of a teachers' college demands that the programs of the teachers shall enable them to have time and energy to consult original sources freely, to replenish and reorganize their material constantly, and to keep their own minds enriched by continued constructive study, thus giving vigor and originality to their instruction. To this end the following standard teaching loads are held to constitute a reasonable expectancy for the faculty of a teachers' college:

a) In English composition 12 hours of class work a week with classes of 25 students each, which is equivalent to 300 student hours.

b) In general classroom subjects 15 hours of class work a week with 25 students in a class, which amounts to 375 student hours.

c) In shop and laboratory work a weekly class program of 20 periods, with divisions of 20 students, or 400 student hours.

d) In physical education 18 hours a week with 30 students to a class, which gives a load of 540 student hours.

3. The conduct of practice-teaching on a basis which shall be effective in leading to a proper initial mastery of the technique of teaching and which shall, at the same time, protect the interests of the children in the practice school requires that

a) Two-fifths of the teaching in the training school shall be done by critic teachers or by other members of the faculty.

b) The standard amount of practice required of every graduate of a teachers' college shall be 180 actual hours of supervised teaching.

c) For every six college students to be given practice-teaching there shall be one critic teacher, with a group of from 30 to 40 pupils.

This use of the student hour is merely a device for determining the size of faculty for any given enrolment which will make possible the assignment of classes of standard size with a standard number of hours of teaching a week. In the same manner the standard set up in practice-teaching will provide a measuring unit for determining the size of supervisory staff required for any given enrolment. It is recognized in this connection that no two standard teaching loads as set forth in the foregoing are of equal weight with regard to difficulty. No method of weighting has as yet been devised by which it is possible to determine the number of student hours in one subject which is the exact equivalent in difficulty of a certain number of student hours in some other subject.

These standards are set up on the assumption that teaching is quite a different thing from lecturing. It is held that it is one thing to lecture to a class with certain assigned readings and a few tests but quite another thing to teach a class of students, following closely the progress of each in the process of acquiring a mastery of the material, testing frequently, diagnosing needs for further instruction by means of frequent written tests, and reteaching until all have attained a mastery of the content in question. All of this is believed to be involved in real teaching as distinguished from mere lecturing. In real teaching the teacher follows closely the thinking of each individual student in the class. Teacher-training involves the acquisition of skill in the technique of a highly complex art in which every individual not only must thoroughly understand the theory and principles involved but must also attain a high degree of proficiency in practice. The teaching and follow-up work involved in the kind of instruction which is necessary in an institution for

the preparation of teachers cannot be done in large classes. Just what size of class is the most desirable has not been scientifically determined. The teaching loads suggested appear to be representative of current practice in good privately endowed colleges and in some of the older and best organized teachers' colleges. They are therefore recommended for use until further study is made of the problem. It is believed that they do not deviate greatly from what is desirable.

Are these standards too high? For immediate attainment in all particulars, yes; for ultimate achievement, no. These standards represent those required for full teachers'-college status, but it is well recognized that they are attainable at the present time by only a small minority of the teachers' colleges. Conformity to these teaching loads for members of the staff of the college department will present no serious difficulty in the case of most of the schools. It is in connection with the development of an adequate supervisory staff that the great difficulty lies. This discussion purposely raises the very serious question of whether the teachers' colleges can train the large number of students now enrolled in some of these institutions. It is evident that many cannot under the present conditions of limited enrolments of pupils for practice purposes. Some, however, have secured in one way or another the necessary pupil material and have developed the supervisory staffs required for effective work. This fact seems to indicate that it can be done. Most teachers' colleges, however, now fail to such a degree to measure up to the standard in this respect that the problem is one of large proportions. Nevertheless, its complete solution is essential to the full functioning of a teachers' college. There is danger, under the large enrolments which have been reached in some of the teachers' colleges, that standards of supervision may break down by the sheer inability of the present staff to carry the load.

In the mastery of technique, schools for professional education place great stress on practice as a part of the learning process. The American Medical Association refuses to accredit any medical school which does not maintain ample facilities for clinical practice. So strict is the insistence on this rule that medical schools which are

not able to measure up to the required standards in this particular are often obliged to discontinue. In order to provide for practice, million-dollar hospitals have been built by state universities with enrolments of a few hundred students in the medical course. It is not possible or desirable to build million-dollar training-school buildings, because in most cases an insufficient number of children would reside in the neighborhood to fill such a building. Nevertheless, if teachers' colleges expect to carry on as effective work as the enterprise of public education demands, an abundance of the clinical material of teacher-training must be obtained. Children in real schools, doing real work, are as necessary in training teachers as are hospital facilities in training doctors. There must be an appropriation of public school facilities in local or neighboring school systems for training-school purposes far beyond that which most teachers' colleges possess at the present time. Must not even building programs, increased enrolments, and other lines of expansion be delayed for this? May it not be that campaigns for funds for additional supervisory staffs and perhaps for subsidizing local school systems will have to be conducted with the same vigor as campaigns for funds for new buildings? May it not be necessary even to restrict the enrolments until the teachers' colleges catch up in the development of their practice facilities?

In the last analysis, the effectiveness of any teachers' college will depend more on the excellence of the facilities for instruction and the quality and amount of supervision given by individual members of the staff than on any other factor. It is, then, of the greatest importance that those conditions under which supervision and instruction may best function shall be produced in every teachers' college. It is imperative that there shall be instructional and supervisory staffs which are adequate in point of number to carry on such a grade of work as is expected of the modern teachers' college. Is not the attainment of this goal the next step in the establishment of standards for teachers' colleges?

Educational Writings

REVIEWS AND BOOK NOTES

A new utilitarianism.—The history of philosophy, it has been suggested, is a history of the earnest discussion of questions which should never have been asked. The question made famous by Herbert Spencer and in some sense revived by Charles Franklin Thwing[1] tends somewhat to fall into this same class. The decades since Spencer wrote have seen his answer thoroughly tried, and now, so the school registrations indicate, that answer is falling away from its high place. Science, we are beginning to think, is not, after all, the knowledge of most worth, and the classes in Latin are growing again. To this return movement Dr. Thwing's book is designed to contribute. He says in his Introduction:

> In answer to the question of the relative worths of different forces or applications of education, these chapters seek to offer evidence that the education of the intellect is of a value higher than the appreciation of executive power. . . . . For the brain is in peril of going out of fashion. . . . . Engineering has supplanted the humanities, the office the study, the business manager the professor and researcher. [This volume] tries to point out the relatively more important place of the intellect than of the executive faculty in man and in man's education.

To this end Dr. Thwing has classified the various aspects, if we may thus call them, of the individual and of the community which are or may be affected by education and then has examined briefly the education itself which is to bear on these aspects—examined it as to content, forces, methods, and conditions—and finally has presented his conclusion that to the individual and the community and to the institutions specifically of family, property, church, and state the education of the most value has been not that in material science but what he has called, perhaps not altogether fortunately, "the education of the intellect."

If Dr. Thwing's conclusions mean that more courses in science will not much improve our present educational system, few, one feels, will be disposed to quarrel with him. But the decision to isolate the "intellectual" from the "administrative" faculty—or, indeed, any one intelligent activity from another—and to adjust educational emphasis to one specifically rather than another is a dangerous step. It is quite likely that Dr. Thwing would be the

[1] Charles Franklin Thwing, *What Education Has the Most Worth?* New York: Macmillan Co., 1924. Pp. x+236. $2.00.

first to disclaim any intent to make his distinctions absolute; yet so long as we start from the point implied by Herbert Spencer's question, just so long do we run the risk of missing that very goal of education which it is Dr. Thwing's purpose to set up. What that goal is Dr. Thwing has very well revealed in a quotation from A. E. Stearns's *The Challenge of Youth*, in which Principal Stearns recounts his experience under Professor Charles E. Garman at Amherst.

> Discussion never stopped with the classroom. It went on everywhere. Mr. Garman's study, a mile from the campus, gathered within its walls every night a group of eager students. . . . . Frequently small groups would slip from their fraternity houses in the early morning hours and . . . . would renew the struggle to understand the great and eternal problems of human life and the human soul that we had come to feel were the most important and the only real things in the world.

A finer picture of education at its best it would not be easy to paint, but, if I understand Dr. Thwing correctly, he feels that its beauty and glory were dependent, partly at least, on its being education in a certain thing, whereas the truer answer would seem to be that they were the result of education in a certain way. Physics, chemistry, statistics, what you will, at the hands of a Charles E. Garman would have yielded golden adventures of the spirit, and, as it did so, the question, "What knowledge is of most worth?" must have faded out, to be replaced by the question which *should* have been asked, "How shall we go about it to make all knowledge such an adventure?" It is the difference between these two questions which Dr. Thwing's book seems to have lost sight of to some extent.

T. Livingston Scholtz

Ohio State University

Adapting the school to individual differences.—An experiment made in Public School 64 of New York City, which has been reported in book form,[1] is of more than usual significance for public education. The outstanding objectives of the experiment were to determine (1) the mental and physical capacities of the children as they entered the school and (2) how far the school could adapt its procedure to the characteristics and needs of the children. The experiment was carried on for six years before the report was printed, and one finds, therefore, not simply a set of proposed plans but a detailed statement of the outcome of these plans. Furthermore, the experiment was made in a school of three thousand pupils under ordinary public school conditions and with probably as many handicaps as any public school would be called upon to face.

The book contains thirteen chapters. The first two chapters discuss the character of the experiment and the public school conditions under which it was carried out. The next group of five chapters discusses the method of classification used, the co-operation of the teachers and the school psychologist, and the methods of organizing the school, the course of study, and the ungraded

[1] Elisabeth A. Irwin and Louis A. Marks, *Fitting the School to the Child*. New York: Macmillan Co., 1924. Pp. xxvi+340.

classes. This section is followed by a series of three chapters which are particularly interesting and which discuss, in turn, "The Dull Normal Boy," "The Neurotic Child," and "The Gifted Child." The next two chapters deal with "Vocational Counseling" and "Health Education." A final chapter presents the authors' conclusions.

The book is particularly pertinent at the present time. The democratization of education has produced a new attitude toward children in school. It is becoming apparent that the obligation of the school is equal for all types of pupils who attend and that no longer can the methods of teaching and the course of study be adapted to a select group while those outside of this group are allowed to fail. The position of the authors is very well stated in the following quotation from their concluding chapter:

> The public school cannot select its clientèle. It must take all comers, rich and poor, alien and native, genius, average, defective—the socially valuable and those of opposite tendencies. Compulsory education requires an entire reconstruction of our school organization, methods, and aims. The public school must have a place for every kind of child above the grade of idiot. And this means much more than merely providing a hardwood seat with a cast-iron base. It means a place for the personality of the child, whatever his characteristics may be. It means an inclusive attitude instead of an exclusive attitude. It means a spirit of hospitality which is as broad and all-embracing as universal compulsory education itself.
>
> As a matter of fact, many public schools live up to their reputation for inclusiveness in theory only. The processes of selection and elimination, which are openly and legitimately employed by private schools, are used by the public school as a last resort and disingenuously practiced. The child who is persistently troublesome is passed on by transfer to another school, accompanied by an innocent-looking record which, oddly enough, gives no hint of his previous career as a trouble-maker. The big overgrown boy, whom the teachers describe as a "dumb-bell," is urged to take his working papers. He might just as well, they say, for all the good he is getting out of school. Another way of getting rid of an impossible boy is "to make an example of him," by sending him to the truant school, the disciplinary school, or the juvenile court. During the six years of this experiment no child was eliminated from the school under any of these pretexts [pp. 60–61].

The sections of the book which deal with dull normal children and neurotic children contain some interesting case descriptions as well as a general discussion of the traits of these types of children. Although the psychology of these children is none too well understood and while it is often difficult to draw a clear line of distinction between the normal and the abnormal, such a study as the authors present is of real value to teachers or principals who are trying to understand these types of children.

The book is an excellent contribution to that field of endeavor which aims to analyze the problems of education in such a way that the needs of individual children can be met. The book is worth careful reading by all persons interested in the science of education.

G. T. Buswell

A book on school bonds.—Possibly because they need all of the money they can reasonably get from current revenues to meet teachers' salaries, operating costs, and other items of running expense, school systems everywhere have been obliged to postpone to a future time payment for school buildings, sites, and other items of permanent improvement. In brief, the tendency in recent years has been to secure funds for permanent improvements through borrowing and bonding. Indeed, many communities, through choice or necessity, have been selling bonds to secure funds to pay teachers' salaries and to meet similar items of running expense. There are those who charge the schools with having engaged in an "orgy" or "saturnalia" of bonding. Whatever the merit of such descriptives, certain it is that the bonded indebtedness for schools, as for all phases of government, has mounted rapidly in recent years.

If it is necessary for a school system to issue bonds, it goes without saying that sound business principles should be followed in the procedure. It is for the purpose of suggesting some of these sound business principles that a book[1] on the subject of school bonds has been issued.

The chapter titles will give the reader some idea of the contents of the book: "How Can School Building Programs Be Financed?" "What Is a School Bond?" "Trends in School Bonded Debt Assumed Annually," "Justifying a School Bond Issue," "Retiring School Bonds," "Marketing School Bonds," "Recording School Bonds," and "Some Functions of State Departments of Education in Issuing School Bonds."

The book is primarily a statement of the legal status of school bonds in the several states of the Union, the author having brought up to date McDowell's 1914 investigation of the legal status of school bonds. The chapters on the retiring, marketing, and recording of bonds are the most practical. Much of the material in the earlier chapters seems to have no place in the book; this is particularly true of the material in the chapter on "Trends in School Bonded Debt Assumed Annually." Lack of plan and organization is the main defect of the book. However, those interested in the subject of school bonds will find this book the chief contribution to the subject.

WARD G. REEDER

OHIO STATE UNIVERSITY

Functional deviation as an important aspect of the study of intelligence.—The past two decades have witnessed remarkable progress in the development of instruments for measuring the native mental capacity of an individual. There is little doubt that mental tests measure with a satisfactory degree of accuracy the quantitative aspect of this factor which may be translated in terms of learning power. However, even casual observation often reveals the fact that a considerable number of individuals deviate in their behavior and achievement from what would be expected on the basis of their mental test

[1] John Guy Fowlkes, *School Bonds*. Milwaukee, Wisconsin: Bruce Publishing Co., 1924. Pp. 176. $2.25.

ratings. The growing number of individual case studies which are appearing in the literature indicates the extent to which students of education are becoming interested in the problem of determining the reasons for such variation in mental function.

A recent book[1] attacks the difficulty from the standpoint of psychopathic instability. The definition of psychopathy as the extent to which the intelligence with which a person is equipped works normally or abnormally (p. 143) permits an extension of the methods and procedure described by the author to similar problem cases which the teacher frequently finds in the classroom. The problem is set forth to best advantage in the following extract from the Preface:

> Given two children of the same actual age, with similar mental ages, satisfactory environments, suitable recreational facilities, and proper schooling, one will present every potential indication of becoming a good citizen, whereas the other will reflect all possible vagaries of unreliable behavior, wrong desires, and wrong principles. . . . . There is a definite cause. . . . . Just as each individual has a certain mental level or *quantity* of intelligence available, so he has a definite *quality* of that quantity. . . . . No matter what the child's mental level, that intelligence which he has may function efficiently, inefficiently, peculiarly, disastrously, or unpredictably, because of such *difference of quality*. . . . . Actually, a statement of the mental level of a child may be most misleading, for any child is apt to be the one in whom mental function, not mental level, is the determining factor in behavior [p. viii].

Part I deals with "The Unstable Child in Theory." The author presents in this section a discussion of the origins, recent tendencies, methods, equipment, and type of trained personnel of the clinical psychology laboratory. Of particular value to teachers are the chapters entitled, "A New Angle: Psychopathy" and "Methods of Determining Psychopathy," both of which should be a real aid in identifying pupils of this type.

Part II deals more concretely with "The Practice of Psychopathy" and contains chapters that relate particularly to the treatment of psychopathic children. The author furnishes an abundance of material concerning actual cases which came within her experience. The excellent technique which was employed in making these case studies is one of the most significant contributions of the book.

The author writes in an unusually interesting style. The material is thoroughly scientific and comes out of a wealth of experience. While it would be well if the reader had some knowledge of psychology, the book is not so technical but that its import may be grasped readily by the intelligent teacher or social worker. Throughout, the writer strongly emphasizes the encouraging aspect of her work that distinguishes it from the treatment of those unfortunate persons whose difficulty is quantitative mental deficiency. A limited amount of native capacity cannot be remedied. Unstable mental functioning, on the other hand, can be overcome by the processes of intelligent diagnosis and appropriate treatment.

[1] Florence Mateer, *The Unstable Child*. New York: D. Appleton & Co., 1924. Pp. xii+472.

The psychopath is a chance waste product of our attempts at civilization. He will not grow less numerous. He is with us to stay. It is our duty and our privilege to study and to help him. He feels intensely, lives exceedingly. He is a bundle of contradicting desires, abilities, and defects. He has potentialities. What he needs is early detection, long years of training, supervised parole without stigma, and a chance to make good. He will repay such care as no feeble-minded individual can. . . . . We need institutions, hospital schools for psychopaths, hospital schools where the young delinquent will be treated, educated, trained, made independent and self-directing, and then sent out to redeem his delinquency [p. 459].

PAUL L. PALMER

Educational neglect of the imagination.—Criticisms of our educational programs for their neglect of the emotions and of the imagination appear periodically. A recent criticism[1] of this sort from England is based largely on conditions that obtained in that country two decades ago, when the book was written. The last chapter, which was not prepared until recently, revokes much of the criticism of England's educational shortcomings and points out some of the recent advances that have been made to alleviate the conditions of the poor by the provisions in public education for such institutions as the nursery school, the camp school, and open-air rooms. The book was originally intended as a psychological and sociological argument for such schools. The purpose of the book is well expressed in a prefatory note by J. L. Patou:

The great indictment of our present social order . . . . the greatest indictment of our present educational system . . . . is that it quenches the ideal, the light in the soul. . . . . To those in the home or the school who cherish the forward look, I commend . . . . this book of hope and endeavor. It is mystic, and it is practical—practical because it is begotten of experience and mystic because that experience has been linked on from the first to the great unseen Forces which supply and support all life with Vision and Power.

Judging from this and from modest intimations in the book itself, we seem to have here the argument for a life spent in educational social service in the slums.

The practical values are to be found in occasional references to the nursery schools to which the author has devoted her life. These references are too occasional and fragmentary to be of much use to anyone seeking information about such schools. Furthermore, they are lost in an unorganized mass of anecdotal and sentimental material dealing with the place and value of imagination in art, the workshop, the sciences, the trades, and the home. The extent to which this lack of organization exists may be seen in a whole page on "our failure to provide baths in school" in a chapter of seven pages dealing with "Line Drawing and Speech."

M. J. STORMZAND

UNIVERSITY OF SOUTHERN CALIFORNIA

[1] Margaret McMillan, *Education through the Imagination.* New York: D. Appleton & Co., 1924. Pp. 208. $2.00.

The psychology of the elementary-school subjects.—The psychology of the common branches may be written in at least two different ways. One may take the formal principles of psychology and in a deductive and a priori fashion apply them to the problems of teaching the various elementary-school subjects. One may, on the other hand, make a detailed and analytical study of the mental processes involved in the various school subjects and then write in a descriptive and explanatory fashion about these processes. The first method is logical in terms of the science of psychology, and the behavior of the child's mind is interpreted in the light of the systematic series of the laws of psychology which are made the basis of the treatment. The second method abandons somewhat a formal and systematic statement of psychological theory and proceeds by investigating the operations of the child's mind by whatever objective methods of analysis are available. The book by Professor LaRue[1] follows both of these methods of procedure, but the first method is undoubtedly the predominant one.

The book is divided into two parts. Part I, which contains six chapters, gives a statement of certain basic laws of psychology. The first two chapters discuss the nature of bonds or connections and their physiological bases. The three following chapters are devoted to the general laws of readiness, exercise, and effect, while the sixth chapter gives suggestions for the establishment of the desired bonds. Part II, which contains sixteen chapters, takes up, subject by subject, the various studies in the elementary-school curriculum. The methods of treating these subjects are similar. The concept of bonds to be formed prevails throughout, and the laws of readiness, exercise, and effect are applied to the various school subjects. Each chapter is followed by class exercises and assignments for further study as well as by a list of bibliographical references. Illustrative examples are abundant and, for the most part, well chosen. The book is written as an elementary text; it is, therefore, better adapted to normal-school classes than to advanced college classes.

G. T. Buswell

Arithmetic for employed youth and junior high school pupils.—Margaret Campbell, in the Preface of her book, *Workaday Arithmetic*,[2] says, "The purpose of these lessons is to help the young worker to see the practical side of arithmetic in its everyday use" (p. vii). "Everywhere will [this text] appeal to the part-time or continuation school and to the junior high school," writes C. A. Prosser in his enthusiastic analytical foreword of thirteen pages. "In these types of schools," Mr. Prosser appropriately remarks, "the great majority of the pupils either are or soon will become wage-earners. What they need is the ability to apply arithmetic to the needs of their daily lives, both in their employment and outside of it" (p. ix).

[1] Daniel Wolford LaRue, *The Child's Mind and the Common Branches.* New York: Macmillan Co., 1924. Pp. x+484.

[2] Margaret M. Campbell, *Workaday Arithmetic.* New York: Century Co., 1924. Pp. xxvi+180. $0.90.

A glance at the leading topics shows the general nature of the material in the text: graphing, tabulating, fractions, measurement, percentage, department stores, handling money, business arithmetic, reading and making tables, economics, construction work, and machinery. The book is better than the logic of this list. Each of the topics is handled in a strikingly, even radically, inductive manner. Formulas are not set up arbitrarily and explained deductively but are introduced with experiences and interests already common to the pupils or by experiences provided in the text in the form of numerous directions and questions.

Our arithmetics are making a gallant effort to reform. Their cardinal sins have been remoteness from social usage and maladjustment to pupil mentality. Texts like the one under discussion will help point the way to arithmetical sanity. The author has been extremely alert to current social practices involving number and ingenious in the organization of the material for instruction. Naturally, number situations have been introduced the general value of which is questionable. We need many more investigations like those conducted by Wilson, Woody, and Wise before arithmetic will be reasonably secure in its subject-matter. Meanwhile, a social point of view and common sense will contribute measurably toward advance, as it seems to have done in the present case.

With regard to the organization of material for instructional purposes, the book is open to criticism. The inductive method has been overdone. The old conspiracy again—to have the child invent a social inheritance. Fancy the average twelve-year-old mastering the bar diagram from the following explanation and directions: "Instead of drawing a line for the graph, bars may be used. They may be horizontal or vertical, and may be placed close together or with a space between them." Automobile prices are then presented, followed by the direction, "Make bar graphs," etc. (pp. 6–7). On page 11 appears the following: "Another important thing to know is how to arrange a frequency table. This simply shows the number of pupils who made a score of 30, 22, or any other number." Three questions are asked, followed by the instruction, "Make a frequency table," etc. Aside from the question of the social utility of the frequency distribution for junior high school pupils, no comment is necessary on the inadequacy of the treatment. Such inadequacies, however, must not be magnified out of proportion. The merits of the text far outnumber its deficiencies.

The book is designed for either group or individual instruction and is accompanied by a manual of sixty-two pages, containing directions for teaching and answers to problems.

FREDERICK S. BREED

A plan for extending the pupil's vocabulary.—Most spellers are designed to teach spelling. The primary purpose of a recently published speller,[1] however,

[1] A. Meyer, *Vocabulary-Building Speller*. New York: Macmillan Co., 1924. Pp. viii+140.

seems to be vocabulary-building. The book contains about five thousand words "above the sixth grade," arranged in two parts of sixty-five lessons each. A lesson consists of forty words, four of which are defined and used in sentences; twenty-four are defined but not used in sentences; and twelve are presented in column form only. The pupil is expected to acquire the spelling of the last group of words, the spelling and definition of the second group, and the use as well as the spelling and definition of the first group.

The editor of the Read System of Commercial Texts, in which series the book appears, informs the reader in the Introduction that "the five thousand words in this book were selected by four experts, each of whom checked through the dictionary and all the available scientifically compiled spelling lists" (p. vii). In the Preface the author says that the words have been arranged according to their frequency of use. A comparison of the forty words in the first lesson with a list of the nine thousand words most commonly used in business and personal correspondence, derived from eleven investigations, shows that twelve of the forty words are not found in the list at all and that five are words which appear in the list with a frequency of only one.

The book represents the magnification of one principle in the teaching of spelling and the violation of many principles. It provides the pupil with a questionable vocabulary and the teacher with practically no methods of instruction. It is designed for use at the junior high school level but is unsuitable because it is unscientific.

FREDERICK S. BREED

Elaborate instruction in grammar.—Teachers who believe that instruction in grammar should occupy a larger place in the junior and senior high school grades and that an elaborate textbook devoted to grammar is needed will welcome a recent book.[1] The author agrees with other modern textbook writers in laying major emphasis on the sentence, using the simple sentence primarily for exercises in parsing. In contrast with the treatment in other books, the author presents a pretentious program of diagramming as an aid to analysis. This is in keeping with the avowed principle that instruction should be conducted largely through pupil activities and is quite consistent with the almost complete absence of definitions and rules. The book is commendable in its endeavor to make grammar function in composition. It really may be called an elaborate laboratory manual for extensive drill in an important aspect of language work. However, one might wish that instruction in formal grammar might be reduced more approximately to minimal essentials.

R. L. LYMAN

Term plan in English.—What amounts to a very elaborate syllabus of English for the first term of the seventh grade,[2] presumably to be followed by

[1] Mabel C. Hermans, *Studies in Grammar.* New York: Henry Holt & Co., 1924. Pp. xii+464. $1.36.

[2] Stella Stewart Center, *Students' Handbook: Term Plan in English* (seventh year, first term). New York: Boni & Liveright, 1924. Pp. 64.

similar syllabi for the second term and for other grades, has been prepared by the head of the English department of the Walton Junior-Senior High School, New York City. The pamphlet is unique in one respect: it is a course of study *addressed to the pupils*, telling them exactly what to do day by day, week by week. On the whole, the program is in keeping with the best thought regarding the function of English in the junior high school. It is, however, open to the objection that instruction based on it will be scattering. It is not responsive to the idea of teaching in blocks a subject with many aspects, such as English. How long must children be hurried from one detail of the English program to another, in a relative hodgepodge of activities? English instruction in the junior high school must find principles of system and organization.

R. L. LYMAN

Reading material for the elementary grades.—While it is desirable that children become acquainted with some of the masterpieces of literature, the accomplishment of such a plan has been hindered by the lack of suitable material written in language sufficiently simple for children to read. Two books which are intended to supply this need have recently been published. One of these is an adaptation of Victor Hugo's *Les Miserables*.[1] A number of outstanding incidents from the original volume have been rewritten in such a form that the story is continuous and the language well within the understanding of the child. The story is very well retold and will, without doubt, be of interest to elementary-school children. It should, furthermore, tend to stimulate a later reading of the original work.

A second book,[2] of a somewhat different type, presents a series of stories, attractively written and illustrated, based on English history. One of the prominent elements running through all of the stories is the use of personal anecdotes and incidents which are of interest to the child chiefly because of the human characteristics portrayed. The book is a revision of an original set of stories first published in 1897. The revision represents these original stories in a form more suitable for elementary-school reading and supplies reading notes at the end of each selection which are of assistance for class exercises.

A book of reading material[3] of a very different nature has been prepared by Professor Walter Barnes. Professor Barnes has selected some of the outstanding poetry for children and has made these poems the basis of a series of essays which analyze the qualities of the selections and discuss the purposes of the authors in writing them. While the book is not intended for direct use in elementary-school classes, it will be of very great assistance to elementary-school teachers, since it will help them in teaching and interpreting some of the

[1] Ettie Lee, *Victor Hugo's Les Miserables* (an adaptation). New York: Boni & Liveright, 1924. Pp. viii+96. $0.75.

[2] Albert F. Blaisdell, *Stories from English History*. Boston: Ginn & Co., 1924 [revised]. Pp. viii+196. $0.72.

[3] Walter Barnes, *The Children's Poets*. Yonkers-on-Hudson, New York: World Book Co., 1924. Pp. vi+264. $1.80.

best literature for children. In presenting the literature of childhood in this manner, Professor Barnes is making a new contribution. Teachers who encounter difficulty in using poetry in elementary-school classes should not overlook this book.

Another seventh- and eighth-grade textbook in American history.—In spite of the fact that there are more than forty existing textbooks in American history on the seventh- and eighth-grade level, additional texts are appearing at the rate of three or four a year. In too many cases the newcomer is merely another book rather than a new book. In some respects, this is true of the one[1] which has just come to the writer's attention. While the authors have introduced a few new features into their text, in the main the work follows traditional lines rather closely.

In the matter of general organization, the authors have done what appears to be a good piece of work but probably no better than that done by McLaughlin and Van Tyne in their *History of the United States* for Grades VII and VIII. The internal organization consists of forty chapters, each containing a number of co-ordinately arranged topics. The outlines at the beginning of each chapter indicate organizations of the chapters that one has some difficulty in identifying in the chapter discussions. To some, such outlines may be an aid; to others, a hindrance.

There is little that one can say about this book that could not be said about a half-dozen other recent books. It contains a very large number of topics in bold-face type, a number of illustrations rather poorly done, a number of black and white maps but no colored ones, and an appendix which includes a list of the presidents, a list of important dates, the United States Constitution, and other material of a similar nature. There is one thing, however, that the text contains that is not usually found in others of its character. This is a number of two- or three-page biographies of leading personages in our history. These biographies are not mere catalogues of facts but interesting presentations of the outstanding features of the lives of the individuals and their connection with the life of the nation.

At the beginning of each chapter there are, besides an outline of the chapter, other teaching aids called "Problems." These are not problems in any true meaning of the term unless one considers it synonymous with the term "questions." There are also some suggestive exercises appearing now and then throughout the book. In connection with the outlines of the chapters, references are given. One book frequently referred to is a publication of the company which publishes the history. Inasmuch as the reference in question is not at all adapted to the abilities of junior high school pupils, it would seem that harm rather than help would result from such a mode of advertising.

R. M. TRYON

[1] Arthur R. Leonard and Bertha E. Jacobs, *The Nation's History*. New York: Henry Holt & Co., 1924. Pp. xvi+632. $1.72.

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

AYER, FRED C. *Studies in Administrative Research.* Seattle, Washington: Department of Research, Seattle Public Schools, 1924. Pp. 118.

CARROTHERS, GEORGE E. *The Physical Efficiency of Teachers.* Teachers College Contributions to Education, No. 155. New York: Teachers College, Columbia University, 1924. Pp. x+80.

CHAPMAN, J. CROSBY, and COUNTS, GEORGE S. *Principles of Education.* Boston: Houghton Mifflin Co., 1924. Pp. xviii+646. $2.75.

CLEM, ORLIE M. *Detailed Factors in Latin Prognosis.* Teachers College Contributions to Education, No. 144. New York: Teachers College, Columbia University, 1924. Pp. vi+52.

Experimental Practice in the City and Country School. Edited by Caroline Pratt. New York: E. P. Dutton & Co., 1924. Pp. viii+302. $2.50.

HINES, HARLAN CAMERON. *Junior High School Curricula.* New York: Macmillan Co., 1924. Pp. xii+188.

MOORE, CLYDE B. *Civic Education: Its Objectives and Methods for a Specific Case Group.* Teachers College Contributions to Education, No. 151. New York: Teachers College, Columbia University, 1924. Pp. x+120.

PYLE, WILLIAM HENRY. *Psychological Principles Applied to Teaching.* Baltimore: Warwick & York, Inc., 1924. Pp. vi+198.

REEVES, FLOYD W. *The Political Unit of Public School Finance in Illinois.* Report of the Educational Finance Inquiry Commission, Vol. X. New York: Macmillan Co., 1924. Pp. xvi+166.

RUGGLES, ALLEN MEAD. *A Diagnostic Test of Aptitude for Clerical Office Work.* Teachers College Contributions to Education, No. 148. New York: Teachers College, Columbia University, 1924. Pp. viii+86.

SHARP, RUSSELL A. *Teaching English in High Schools.* Boston: Houghton Mifflin Co., 1924. Pp. xii+164. $1.20.

SPAIN, CHARLES L. *The Platoon School.* New York: Macmillan Co., 1924. Pp. xviii+262.

UHL, WILLIS L. *The Materials of Reading.* Newark, New Jersey: Silver, Burdett & Co., 1924. Pp. xiv+386.

WILLETT, GEORGE W. *The Public School Debt in Illinois.* Report of the Educational Finance Inquiry Commission, Vol. XI. New York: Macmillan Co., 1924. Pp. xvi+98.

WODEHOUSE, HELEN. *A Survey of the History of Education.* New York: Longmans, Green & Co., 1924. Pp. viii+232. $2.00.

WYNNE, JOHN P. *Guide to Educational and General Psychology.* New York: Fordham Publishing Co., 1924. Pp. viii+84.

BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

ALLEN, NELLIE B. *How and Where We Live.* Boston: Ginn & Co., 1924. Pp. vi+282. $0.88.

ALLEN, NELLIE B., and ROBINSON, EDWARD K. *Stories and Sketches: What People Are Doing.* Boston: Ginn & Co., 1924. Pp. 32. $0.44.

ANDREWS, JANE. *Ten Boys Who Lived on the Road from Long Ago to Now.* Boston: Ginn & Co., 1924. Pp. x+248. $0.64.

BARROWS, HARLAN H., and PARKER, EDITH PUTNAM. *Geography: Journeys in Distant Lands.* Newark, New Jersey: Silver, Burdett & Co., 1924. Pp. viii+152.

BLAISDELL, ETTA AUSTIN. *The Kelpies.* Boston: Little, Brown & Co., 1924. Pp. 148.

BLOUNT, RALPH E. *Health as a Heritage.* Chicago: Allyn & Bacon, 1924. Pp. x+44.

BOYLE, MARY E. *Prehistoric Man.* Boston: Little, Brown & Co., 1924. Pp. xxii+136.

COBB, WALTER FRANK. *Graded Outlines in Hygiene,* Book Two. Yonkers-on-Hudson, New York: World Book Co., 1924. Pp. viii+388. $2.00.

Handcraft. New York: Playground and Recreation Association of America, 1924. Pp. 32. 37 plates.

HOOKER, WILLIAM FRANCIS. *The Bullwhacker.* Edited by Howard R. Driggs. Pioneer Life Series. Yonkers-on-Hudson, New York: World Book Co., 1924. Pp. xvi+168. $1.00.

LECRON, HELEN COWLES, and JEWETT, BERTHA SHORE. *Picture Tales for Tiny Tots.* New York: Frederick A. Stokes Co., 1924. Pp. 122. $1.25.

LOPP, WILLIAM T. *White Sox.* Animal Life Series. Yonkers-on-Hudson, New York: World Book Co., 1924. Pp. viii+76. $0.80.

Open Gates: A Book of Poems for Boys and Girls of Junior High School Age. Compiled and edited by Susan Thompson Spaulding and Francis Trow Spaulding. Boston: Houghton Mifflin Co., 1924. Pp. 384. $1.20.

STEVENS, MARION PAINE. *Teaching What to Read and How to Read It,* Part I. Kendall Series of Readers. New York: D. C. Heath & Co., 1924. Pp. viii+380.

VOSBURGH, WILLIAM LEDLEY, GENTLEMAN, FREDERICK WILLIAM, and HASSLER, JASPER O. *Junior High School Mathematics,* Second Course. New York: Macmillan Co., 1924 [revised]. Pp. x+256.

WEBB, HANOR A., and DIDCOCT, JOHN J. *Early Steps in Science.* New York: D. Appleton & Co., 1924. Pp. xvi+692.

PUBLICATIONS OF THE UNITED STATES BUREAU OF EDUCATION AND OTHER MATERIAL IN PAMPHLET FORM

The County School System: How Organized and Administered. Prepared under the direction of Benjamin J. Burris. Educational Bulletin No. 73.

Indianapolis, Indiana: State Department of Public Instruction, 1924. Pp. iv+56.

KING, FLORANCE B., and CLARK, HAROLD F. *Foods Test for Grades 6 thru 12.* Bloomington, Indiana: Indiana University Bookstore, 1924. Pp. 8.

KORNHAUSER, ARTHUR W. *How to Study.* Chicago: University of Chicago Press, 1924. Pp. viii+44.

Recent issues of the Bureau of Education:

Bulletin No. 6, 1924—*Statistics of Land-Grant Colleges.*

Bulletin No. 8, 1924—*Visual Education Departments in Educational Institutions.*

Bulletin No. 9, 1924—*Intelligence of Seniors in the High Schools of Massachusetts.*

Bulletin No. 15, 1924—*The Daily Schedule in the High School.*

Report of the High School Visitor, University of Illinois, for the Year 1923–24. University of Illinois Bulletin, Vol. XXI, No. 46. Urbana, Illinois: University of Illinois, 1924. Pp. 70.

STALEY, SEWARD C. *The Program of Sportsmanship Education.* Bureau of Educational Research Circular No. 28. University of Illinois Bulletin, Vol. XXI, No. 49. Urbana, Illinois: University of Illinois, 1924. Pp. 28.

STREITZ, RUTH. *Educational Diagnosis.* Bureau of Educational Research Circular No. 27. University of Illinois Bulletin, Vol. XXI, No. 41. Urbana, Illinois: University of Illinois, 1924. Pp. 16.

Thrift Education. Washington: National Education Association, 1924. Pp. 80. $0.50.

Twenty-fourth Annual Report of the Director of Education. Manila, Philippine Islands: Bureau of Education, 1924. Pp. 160.

MISCELLANEOUS PUBLICATIONS

BARTHOLOMEW, JOHN. *The Oxford Advanced Atlas.* New York: Oxford University Press, American Branch, 1924 [revised]. Pp. 96+32. $3.50.

CORSAN, GEORGE H., SR. *The Diving and Swimming Book.* New York: A. S. Barnes & Co., 1924. Pp. xviii+162. $3.00.

MORGAN, JAMES. *Our Presidents.* New York: Macmillan Co., 1924. Pp. xviii+326. $2.50.

STALEY, SEWARD CHARLE. *Games, Contests and Relays.* New York: A. S. Barnes & Co., 1924. Pp. viii+354. $3.00.